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A DIRECTORY TO COLLECTIONS OF ENGINEERING COMPUTER PROGRAMS.(U)
JAN 77. N00014-76-C-0534

UNCLASSIFIED CHES/NAVFAC-FPO-1-77(5) NL

1 OF 3
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# A DIRECTORY TO COLLECTIONS OF ENGINEERING COMPUTER PROGRAMS

FPO-1-77 (5)
JANUARY 1977

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18 February 1977
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Scientific Officer
Program Director Ocean Technology, (Code 450)
Naval Ocean Research and Development Activity
Bay St. Louis, MS 39520

ATTENTION: Mr. John Gregory

SUBJECT: Transmittal Letter

REFERENCE: Contract N00014-76-C-0534

ENCLOSURE:
(1) FPO-1-77(5), "A Directory to Collections of Engineering Computer Programs"
(2) FPO-1-77(7), "An Index of Laws and Regulations Affecting Fixed Ocean Facilities"
(3) FPO-1-77(8), "Annotated Bibliography Relative to Fixed Ocean Facilities"
(4) Form DD-250, "Material Inspection and Receiving Report"
(5) Distribution List

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EG&G WASHINGTON ANALYTICAL
SERVICES CENTER, INC.

David B. Dillon

David B. Dillon

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

| REPORT DOCUMENTATION PAGE | READ INSTRUCTIONS BEFORE COMPLETING FORM |
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

| | |
|---|---|
| Directories | Compendiums |
| Engineering | Handbooks |
| Computer | Abstracts |
| Computer Program | |

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This directory contains descriptions of 54 compendiums of computer programs relating to engineering problems. It is based on a survey of organizations that create, use, or distribute computer programs. The descriptions concentrate on three aspects of each compendium: bibliographic information about the compendium itself, format data, and the subject areas treated by the computer programs in the compendium. Cross referenced source and subject indices are provided.

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# FOREWORD

This directory to collections of computer program descriptions was conceived as a means for locating computer programs in engineering, particularly ocean engineering, in order to avoid searching for such programs individually. The work of Pilkey and others in compiling abstracts of structural engineering computer programs was known. It was hoped that similar compendiums of computer programs in other engineering disciplines could be found.

By restricting the search to compendiums of computer programs, it was expected that the programs described would be above average in validation and documentation.

A broad definition of the word "compendium" was used while collecting materials for this report. A compendium was required to be in printed form, so computer-tapes, microfilm, microfiche, and the like were reduced to hard-copy. A compendium was required to describe more than one computer program. Technical journals and other collections of technical papers were not considered compendiums, even though many of the papers contained the results of computer calculations.

The greatest variabilities among the compendiums are the amount of descriptive material they contain and the degree of indexing they provide. Descriptive material ranges from simple lists of program names to complete abstracts with analyses of the theoretical basis of the programs. Some compendiums have no indices; others have several.

Another variable among compendiums is durability. This factor was considered because the intent of the survey was to collect compendiums for a library. Some of the compendiums are bound books and need no further preparation. Others are paperbound reports, also suitable for library use. But

BY
DISTRIBUTION/AVAILABILITY CODES
Dist. AVAIL. and/or SPECIAL
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some of the compendiums are loose or stapled sheets, or fanfold computer printouts.

Fragile compendiums were bound. Oversized pages were reduced before binding. One compendium containing many manuscript pages was typed. Compendiums having only a few pages were bound in one of two loose-leaf binders for protection.

One binder was entitled A Collection of Computer Program Literature. The compendiums put in it describe only a few programs. They are not treated individually in this directory. The entire binder is summarized on page 3-6.

The other binder has no title. The compendiums put in it describe many programs. Each of these compendiums is summarized separately in this directory. The summary includes the following note: "Included in a 3-ring binder for protection" to help the user locate these small compendiums.

The search for compendiums proceeded through four levels of personal contact. First, a computer service was engaged to search seven, large engineering data bases. It was hoped that these data bases would contain references to engineering computer program compendiums. The results were disappointing, with only the structural mechanics compendiums appearing in the printout. Next, inquiries were mailed to organizations which seemed likely to have large numbers of engineering computer programs -- industrial corporations, computer services, universities, professional societies, computer program vendors and repositories, research laboratories, and government agencies. The third level of contact was by telephone, and the final by personal visit.

The disappointing return from the computerized search for compendiums was not really an anomaly. Computer programming, as a general body of knowledge, is still in its infancy. Most computer programs are too poorly validated and documented for inclusion in a compendium. Users unfamiliar with the details of a program's development may be unable to obtain results, or may be

misled by invalid results. Most programmers, it seems, would still rather write their own program "from scratch" than obtain or adapt an existing one. Many companies are unwilling to discuss their computer program libraries, much less reveal the presence or absence of program capabilities in a compendium.

Few universities maintain a central catalog listing of the programs written by their professors. Some are prohibited by law from running their programs for clients outside the university, and are reluctant to release their catalogs of programs to ineligible viewers.

Then there are the economic aspects. In affluent times, the expense of documenting a program for inclusion in a compendium seems like a worthwhile investment in technical publicity, and the costs of responding to user inquiries are more easily absorbed. But in leaner times, when smaller staffs are under greater pressure, there is no money for documentation, and user inquiries are pestilential.

The compendiums were prepared for different purposes by their various compilers. It would be inappropriate to criticize a compendium created for one purpose because it failed to satisfy another. At the same time, the validity of programs described in the compendiums listed herein cannot be endorsed. Inclusion of a compendium in this manual does not imply that the computer programs described in the compendium are extant or available for use. Such affairs must be left to negotiation with the owners of the individual programs.

This directory to collections of computer program descriptions was prepared by Ms. Judith Daly and Mr. David Dillon of EG&G Washington Analytical Services Center, Inc., Rockville, Maryland, for the Ocean Engineering and Construction Project Office of the Chesapeake Division of the Naval Facilities Engineering Command under contract N00014-76-C-0534 with the Office of Naval Research.

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# INTRODUCTION

This document is intended to help find computer programs for solving engineering problems. Each compendium described in this manual is presented on two facing pages so that the user has all the information about a compendium before him. The material is presented in four "boxes" on the two pages.

The Bibliographic Information box provides data to identify and obtain the compendium. The book is identified by its title, author, publisher, and date. The addresses of author and publisher are given, and the direct source for obtaining the compendium is indicated by an asterisk.

The Descriptive Information box describes the compendium itself. The TYPE OF COMPENDIUM describes the primary factor common to the programs listed in the compendium. The method of describing the programs is indicated, i.e., abstracts, advertising, brochures, title, listing, etc. SCOPE describes limitations to the programs, secondary factors used in selecting programs for the compendium. The ARRANGEMENT describes the format of the compendium itself. The number and kind of INDEXING DEVICES available to locate programs in the compendium are noted. Whether or not the compendium contains complete ABSTRACTS of the programs is shown. Since many engineering computer programs are based on advanced mathematical principles, whether or not the compendium includes a description of the THEORY behind each program is indicated. Some compendiums are backed by an ASSOCIATED SEARCH ASSISTANCE from which the user may receive additional help in locating a suitable program. Some compendiums are periodicals. The UPDATE INTERVAL is given in these cases. Periodical compendiums may require a subscription, and the complete set of programs may not be printed in each issue. The user is assured that some effort is being made to keep these compendiums current. The approximate NUMBER OF PROGRAMS listed in the compendium is shown. It indicates to the user his probability of locating a suitable program. The ENTRY FORMAT describes how each program is presented in the compendium. Finally, the PRICE of the compendium is given.



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The Subject Index box lists subjects addressed by programs in the compendium and the number of programs addressing each subject. Not every subject in a compendium is listed in the box -- only those broadly related to engineering. Furthermore, a program may be listed under more than one subject. Therefore, the total number of programs listed in the Subject Index box may not agree with the approximate number entered in the Descriptive Information box. Very large compendiums may be cataloged on two or more levels -- subject and subtopic. In these cases, the Subject Index box lists the major subjects and number of subtopics rather than number of programs. The wording of entries in the Subject Index box corresponds as nearly as possible to the wording that appears in the compendium.

The fourth box, Comments, presents facts about the compendium. It serves as a catchall for pertinent compendium data that do not fit into the other, fixed-format boxes. The variability among compendiums is great, especially because "compendium" was defined in general terms.

The facing-page summaries are grouped in Sections 1 through 5 according to the kind of organization that sponsored the preparation of the compendium. Appendix A is a condensed summary of all the compendiums, presenting on facing pages basic facts about each. Appendix B is a list of the organizations from whom compendiums were requested.

A person may use the subject and source indices to find a compendium that describes computer programs relating to an engineering problem. If the compendium is not at hand, a copy may be obtained from the source indicated in the Bibliographic Information box. When the compendium is obtained, a suitable program may be selected, using whatever indexing aids the compendium provides. Finally, the user may contact the owner of the program to obtain a copy or to arrange to have the program run.

Unclassified programs owned by the United States Government are often available at nominal cost. Universities may require that a professor be retained as a consultant. Corporations may refuse program access altogether. Industrial associations may require membership as a condition to access. Computer services, of course, will be happy to run their programs, but are unlikely to sell a program listing. Program vendors are eager to sell their wares.

# SECTION 1
# GOVERNMENT AGENCIES

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Argonne Code Center: Compilation of Program Abstracts


**PERSONAL AUTHOR:** Butler, M.K. Edwards, H.S. Hughes, Catherine
DeBruler, M. Harrison, C. Legan, Marianne
Menozzi, T. Ranzini, L. Strecok, A.J.

**CORPORATE AUTHOR:** Argonne National Laboratory
9700 South Cass Avenue
Argonne, Illinois 60439



*PUBLISHER: National Technical Information Service
U.S. Department of Commerce
Springfield, Virginia 22151

**DATE:** Latest Supplement - April 1975


* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts of programs for the nuclear industry.

**SCOPE:** Programs are selected for their usefulness to ERDA contractors, University Nuclear Engineering Departments and the nuclear industry. Certain designated programs have restricted distribution.

**ARRANGEMENT:** Program abstracts are arranged by accession numbers assigned at the Code Center.

**INDEXING DEVICES:** KWIC (Keyword in Context)

**ABSTRACTS:** Yes **THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** Irregular supplements are published.

**NUMBER OF PROGRAMS:** 555

**ENTRY FORMAT:** Name of Program, Hardware, Problem Solved, Method, Restrictions, Running Time, Unusual Features, Related Programs, Status, References, Language, Name and Organization of Author, Materials Available and Category.

**PRICE:** Price varies according to the size of the supplement.

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Cross-section and Resonance - Integral Calculations | 48 |
| 2. Spectrum Calculations, Generation of Group Constants, Lattice and Cell Problems | 70 |
| 3. Static Design Studies | 61 |
| 4. Depletion, Fuel Management, Cost Analysis and Reactor Economics | 51 |
| 5. Space-independent Kinetics | 16 |
| 6. Space-time Kinetics, Coupled Neutronics-Hydrodynamics-Thermodynamics & Excursion Simulations | 24 |
| 7. Radiological Safety, Hazard & Accident Analysis | 37 |
| 8. Heat Transfer & Fluid Flow | 42 |
| 9. Deformation & Stress Distribution Computations, Structural Analysis & Engineering Design Studies | 52 |
| 10. Gamma Heating and Shield Design | 15 |
| 11. Reactor Systems Analysis | 2 |
| 12. Data Preparation | 13 |
| 13. Data Management | 25 |
| 14. Subsidiary Calculations | 10 |
| 15. Experimental Data Processing | 20 |
| 16. General Mathematical & Computing System Routines | 47 |
| 17. Materials | 6 |
| 18. Environmental and Earth Science | 3 |
| 19. Chemistry | 1 |
| 20. Particle Accelerators & High Voltage Machines | 1 |
| 21. Physics | 4 |
| 22. Controlled Thermonuclear Research | 2 |
| 23. Data | 5 |

## COMMENTS

This is a large compendium with detailed abstracts. Although the compendium is strongly oriented to nuclear reactor design, many of the programs relate to more general engineering problems, especially subject categories 3, 8, 9, 17 and 18. Useful programs may be found in other categories as well.

The composite index is in alpha/numeric order of (1) all the key words in the KWIC title, (2) installation code, (3) machine code, (4) program language code, (5) package code, and (6) subject category code. Thus, one index does the work of six.

A major drawback is that each supplement provides only replacement pages for the previous version. To acquire a complete current volume, the original text must be obtained and sequentially updated with each of the nine massive supplements in turn. The NTIS reproduction of the supplements occasionally prints pages that insert at different places on the front and back of one sheet of paper. In addition, some of the supplements are permanently bound at NTIS, so that collating them into a single document is impossible. However, Supplement 9 contains a complete list of all current program names in the Table of Contents; one may look back through the previous Supplements until the desired page and abstract are encountered.

## BIBLIOGRAPHIC INFORMATION

TITLE: ASIAC Newsletter. Computer Programs Available From ASIAC

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: Aerospace Structures Information and Analysis Center
AFFDL/FBR
Wright-Patterson Air Force Base
Ohio 45433

PUBLISHER: N/A

DATE: May 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Brief descriptions of aerospace structures programs.

SCOPE: Computer programs available from the ASIAC repository.

ARRANGEMENT: Alphabetical by program name.

INDEXING DEVICES: None

ABSTRACTS: No THEORY: No
ASSOCIATED SEARCH ASSISTANCE: No
UPDATE INTERVAL: None planned
NUMBER OF PROGRAMS: 41

ENTRY FORMAT: Program Name and Program Description.

PRICE: N/A

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Stress Analysis | 11 |
| 2. Structural Optimization | 6 |
| 3. Structural Stability | 4 |
| 4. Crack Propagation | 2 |
| 5. Shock and Vibration | 5 |
| 6. Fasteners and Joints | 12 |
| 7. Heat Transfer | 1 |

## COMMENTS

The Air Force Flight Dynamics Laboratory created ASIAC for collecting and disseminating information on aerospace structures.

Programs available from ASIAC are listed in the ASIAC Newsletter, along with other topics of interest.

NOTE: Included in 3-ring binder for protection.

1666-76

## BIBLIOGRAPHIC INFORMATION

TITLE: BRECS Classification Program Index, CYBER 74/28 Computer System

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: U.S. Department of Interior
Bureau of Reclamation
Denver Federal Center
Denver, Colorado 80225

PUBLISHER: N/A

DATE: June 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Brief descriptions of programs from the Bureau of Reclamation computer library.

SCOPE: Contains programs developed for, or by, the Bureau of Reclamation, with emphasis on civil engineering applications.

ARRANGEMENT: Programs arranged by classification category.

INDEXING DEVICES: Program Index (Subject Classification)

ABSTRACTS: No

THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 1,043

ENTRY FORMAT: Program Identification, Program Title, Type, Computer, Language, Status, Version Date, and Documentation.

PRICE: No charge

## SUBJECT INDEX


| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Administrative | |
| a. Administrative Support | 4 |
| b. Design & Engineering | 6 |
| c. Construction | 5 |
| d. Movable Property | 13 |
| e. Property Maintenance | 4 |
| f. Real Property | 20 |
| g. Accounting | 72 |
| h. Budgeting | 11 |
| i. Cost Accounting | 28 |
| j. Payroll | 10 |
| k. Information Storage & Recall | 6 |
| l. Procurement: Load GSA MIF | 1 |
| m. Planning | 2 |
| n. Computer Utilization | 12 |
| o. Benefits Administration | 2 |
| p. Statistics | 9 |
| q. Integrated Personnel Data | 8 |
| r. Employee - Management Relations | 2 |
| s. Statistical Reporting | 4 |
| t. Minerals: Crop Production Report | 1 |
| u. Power | 23 |
| v. Water | 11 |
| w. Utility | 22 |
| 2. Data and Information | |
| a. Data | 17 |
| b. Information | 30 |
| 3. General Civil Engineering | |
| a. Geometry | 56 |
| b. Material Properties | 21 |
| c. Quantities | 49 |
| d. Rock Mechanics | 8 |
| e. Soil Mechanics | 16 |
| 4. Structures | 116 |
| 5. Hydraulics (Civil) | 110 |
| 6. Special Assignments | |
| a. Chemical | 2 |
| b. Electrical | 62 |
| c. Geology | 9 |
| d. Cost Estimating | 25 |
| e. Management | 11 |
| f. Mechanical | 5 |
| g. Miscellaneous | 6 |
| h. Unclassified | 9 |
| i. Weather | 21 |
| 7. Resource Planning | |
| a. Economics | 19 |
| b. Hydrology | 85 |
| c. System Analysis | 3 |
| 8. Mathematics | |
| a. Mathematical Programming | 8 |
| b. Matrices | 7 |
| c. Numerical Analysis | 9 |
| d. Probability | 2 |
| e. Statistics | 6 |
| f. Time Series | 2 |
| 9. Support | |
| a. Support | 37 |
| b. Input-Output | 6 |


## COMMENTS

This compendium is a terse listing of the programs available on the CYBER 74/28 Computer System of the Bureau of Reclamation. Descriptions of program purpose and content are limited to a one-sentance title. However, more than 400 of the 1000-plus programs listed fall in the categories of civil engineering, structures, civil hydraulics, and mathematics.

Use of the index is further complicated by the fact that the major subject headings are not printed; only the secondary headings are interspersed with the headings listed above. No page number is given in the compendium index for these headings. In a few cases there are unusual secondary groupings. "Special Assignments" is divided into a "Miscellaneous" group as well as an "Unclassified" group, for example. Finally, the second program listed on page 17 seems improperly indexed.

This compendium contains a large number of programs. But the confusing index makes finding the "right" program difficult, and the brief entry format makes recognizing the "right" one an added difficulty.

1505-78

## BIBLIOGRAPHIC INFORMATION

TITLE: Catalog GSFC Computer Program Library

PERSONAL AUTHOR: Barns, P.

* CORPORATE AUTHOR: Goddard Space Flight Center
Computer Program Library
Greenbelt, Maryland 20771

PUBLISHER: National Aeronautics and Space Administration

DATE: April 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of programs in the Goddard Space Flight Center program library.

SCOPE: Only programs designed and developed under the sponsorship of Goddard Space Flight Center organizations are included.

ARRANGEMENT: Abstracts are arranged in groups according to primary subject code.

INDEXING DEVICES: Key Word In Context (KWIC) Index
Symbolic Name Index
Program Number Index
Subject Code Index
Item Type Index

ABSTRACTS: Yes

THEORY: No

ASSOCIATED SEARCH ASSISTANCE: Yes

UPDATE INTERVAL: Updated yearly

NUMBER OF PROGRAMS: 1,526

ENTRY FORMAT: Program Title, Date, Distribution Restrictions, Card Statement, Machine, System, Programmer, Sponsor, Site Code, Document Code, and Subject Codes

PRICE: No charge

## SUBJECT INDEX

| | MAJOR SUBJECT | NO. OF SUBTOPICS |
|---|---|---|
| 1. | Accounting, Fiscal, Budget, Etc. | 4 |
| 2. | Astronomical Studies | 4 |
| 3. | Atmospheric & Space Environment | 11 |
| 4. | Graphics Display Systems | 1 |
| 5. | Orbit, Trajectory, Vehicle Motion | 10 |
| 6. | Real-Time | 3 |
| 7. | Tracking, Communication & Data Handling | 9 |
| 8. | Vehicle & Spacecraft Design & Testing | 9 |
| 9. | Program Analysis | 4 |
| 10. | Data Files | 4 |
| 11. | Arithmetic Routines | 4 |
| 12. | Elementary Functions | 5 |
| 13. | Polynomials & Special Functions | 6 |
| 14. | Operations on Functions + Solutions of Differential Equations | 5 |
| 15. | Interpolation and Approximations | 4 |
| 16. | Operations on Matrices, Vectors + Simultaneous Equations | 5 |
| 17. | Statistical Analysis and Probability | 5 |
| 18. | Operations Research Technique, Simulation + Management Science - General | 9 |
| 19. | Input General | 6 |
| 20. | Output General | 7 |
| 21. | Internal Information Transfer | 6 |
| 22. | Executive Routines | 8 |
| 23. | Data Handling | 6 |
| 24. | Debugging | 5 |
| 25. | Simulation of Computers & Data Processors, Interpreters | 5 |
| 26. | Diagnostics | 1 |
| 27. | Service or Housekeeping, Programming Aids | 6 |
| 28. | Logical and Symbolic | 3 |
| 29. | Information Retrieval | 1 |
| 30. | Applications & Application-Oriented Programs | 8 |
| 31. | Linguistics & Languages | 1 |
| 32. | General Purpose Utility Subroutines | 3 |

Note: Due to the large number of programs involved, the number of sub-headings in the catalog index is tabulated, instead of the number of programs for each subject. Major subject 30 includes the following subheadings.

| | SUBHEADING | NO. OF PROGRAMS |
|---|---|---|
| a. | Physics | 39 |
| b. | Other Physical Science | 13 |
| c. | Engineering | 45 |
| d | Business Data Processing | 21 |
| e. | Manufacturing Process & Control | 4 |
| f. | Mathematics & Applications | 21 |
| g. | Biological Sciences | 1 |
| h. | Space Utilization | 1 |

## COMMENTS

This compendium is the cumulative catalog of all active general purpose programs available in the computer library of the NASA Goddard Space Flight Center (GSFC). The programs included in the catalog were either prepared or modified under GSFC sponsorship.

Other NASA computer programs are indexed under contract by the Computer Software Management and Information Center (COSMIC).

Many of the programs in this catalog solve specific NASA problems; others have broader applications.

1000-70

## BIBLIOGRAPHIC INFORMATION

TITLE: A Catalog of Unclassified NUSC Oceanographic Computer Programs (TM No. LA13-22-75)

PERSONAL AUTHOR: Janus, Robert S.

*CORPORATE AUTHOR: Naval Underwater Systems Center
New London Laboratory
New London, Connecticut 06320

PUBLISHER: N/A

DATE: May 20, 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of oceanographic programs available from NUSC.

SCOPE: Contains programs from New London and Newport laboratories, with emphasis on oceanography, environmental acoustics, and ocean engineering.

ARRANGEMENT: Under each of three major categories: General Oceanography, Environmental Acoustics and Ocean Engineering; the programs are arranged by programmer.

INDEXING DEVICES: Title Index

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Irregular

NUMBER OF PROGRAMS: 53

ENTRY FORMAT: Title, Name of Programmer, Phone, Institution, Address, Purpose, Input, Output, Procedure, Documentation and Hardware Requirements.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. General Oceanography | |
| Currents | 5 |
| Salinity | 2 |
| Zooplankton | 3 |
| Fathometers | 1 |
| Buoyancy | 1 |
| 2. Environmental Acoustics | |
| Raw Data Processing | 2 |
| Propagation Loss | 5 |
| Modeling | 3 |
| Statistical Analysis | 2 |
| Calculation Routines | 4 |
| Sonar Systems | 3 |
| 3. Ocean Engineering | |
| Buoys | 6 |
| Currents | 6 |
| Ship Motion | 3 |
| Towed Cable Systems | 6 |
| Corer Penetration | 1 |

## COMMENTS

The programs in this compendium were prepared by the NUSC staff. The compendium was compiled as the contribution from NUSC to the Naval Oceanographic Data Center compendium, Computer Programs in Marine Science, described elsewhere in this document. The abstracts include the name of the person to contact for further details.

1968-78

## BIBLIOGRAPHIC INFORMATION

TITLE: CERC Active Computer Programs of Possible Use to Coastal Engineers

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: Department of the Army
Civil Engineering Research Center
Kingman Building
Fort Belvoir, Virginia 22060

PUBLISHER: N/A

DATE: 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Brief descriptions of coastal oceanographic programs.

SCOPE: Programs developed for CERC use.

ARRANGEMENT: None

INDEXING DEVICES: No

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 27

ENTRY FORMAT: Name, Number, and a Brief Description of the Program.

PRICE: No charge

## SUBJECT INDEX

| PROGRAM TOPIC | | PROGRAM TOPIC | |
|---|---|---|---|
| 1. | Analysis of Surf Data | 14. | Littoral Environment Statistics |
| 2. | Beach Profile Plot | 15. | Harbor Shoaling Rate |
| 3. | Beach Profile Computations | 16. | Specific Wave Characteristics |
| 4. | Bathystrophic Storm Surge Computation | 17. | Littoral Environment Observation Plot |
| 5. | Water Depth Grid Difference | 18. | Ocean Current Data Processing |
| 6. | Wave Table Computation | 19. | Ocean Current Data Plot |
| 7. | Fetch For Irregular Shoreline | 20. | Rapid Sediment Analyzer |
| 8. | Frequency Distribution of Suspended Sediment | 21. | Radioactive Isotropic Sand Tracer |
| 9. | Littoral Environment Observation Data | 22. | Variable Length Tidal Record |
| 10. | Chart of Beach Profiles | 23. | Radiation & Navigation Data |
| 11. | Wave Height vs. Direction | 24. | Tide Plot |
| 12. | Distribution of Surface Marine Data | 25. | Daily Wind Summary |
| 13. | Fourier Transforms | 26. | Great Lakes Sand Bar Profiles |
| | | 27. | Plots Lake Sand Bar Profiles |

## COMMENTS

This is a very brief compendium of programs useful in coastal engineering. The programs were all in active use in the spring of 1976. Though the compendium is small, the specialized nature of the programs makes it a valuable resource for certain problems.

An automatic data processing coordinator has been established at CERC to process requests for information.

NOTE: Included in 3-ring binder for protection.

1686-78

## BIBLIOGRAPHIC INFORMATION

TITLE: Civil Engineering Laboratory, Program Survey

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: Computer Center
Civil Engineering Laboratory
Naval Construction Battalion Center
Port Hueneme, California 93043

PUBLISHER: N/A

DATE: N/A

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Brief descriptions of programs developed at CEL.

SCOPE: Programs developed for the civil engineering of naval structures and related problems.

ARRANGEMENT: These programs were collected informally, and are arranged within the contributing organizational codes.

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 100

ENTRY FORMAT: Format varies.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Biomedical | 2 | 7. Shock and Blasts | 8 |
| 2. Cable/Buoy Systems | 6 | 8. Statistics | 2 |
| 3. Heat Transfer | 5 | 9. Structural Analysis | 47 |
| 4. Mathematical Routines | 8 | 10. Vibration | 2 |
| 5. Optimization | 7 | 11. Miscellaneous | 7 |
| 6. Plotting Graphics | 6 | | |

## COMMENTS

This compendium represents the results of an informal survey conducted at the Naval Civil Engineering Laboratory. This collection was distributed at the June 1976 meeting of the NAFAC/FACSO Computer Aided Design Council.

1560-78

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Computer Program Abstracts

**PERSONAL AUTHOR:** N/A

**CORPORATE AUTHOR:** Computer Software Management and Information Center (COSMIC)
University of Georgia
Athens, Georgia 30602

* **PUBLISHER:** Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

**DATE:** Quarterly

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts of programs available through the COSMIC repository.

**SCOPE:** Includes programs developed by, or for, National Aeronautics and Space Administration, Department of Defense, U.S. Atomic Energy Commission, and private industry.

**ARRANGEMENT:** The contents are arranged into 34 broad subject areas.

**INDEXING DEVICES:** Subject
Originating Source
Program Number/Accession Number
Equipment Requirements

**ABSTRACTS:** Yes
**THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** Yes, through COSMIC.

**UPDATE INTERVAL:** Quarterly

**NUMBER OF PROGRAMS:** Varies

**ENTRY FORMAT:** NASA Accession Number, Program Language, Program Number, Originating Source, Title of Program, Number of Cards, Machine Requirements, Price, and Abstract.

**PRICE:** $3.30 per yearly subscription.

## SUBJECT INDEX

MAJOR SUBJECTS

1. Aerodynamics
2. Aircraft
3. Auxiliary Systems
4. Biosciences
5. Biotechnology
6. Chemistry
7. Communications
8. Computers
9. Electronic Equipment
10. Electronics
11. Facilities, Research and Support
12. Fluid Mechanics
13. Geophysics
14. Instrumentation and Photography
15. Machine Elements and Processes
16. Masers
17. Metallic Materials

MAJOR SUBJECTS

18. Nonmetallic Materials
19. Mathematics
20. Meteorology
21. Navigation
22. Nuclear Engineering
23. General Physics
24. Atomic, Molecular, and Nuclear Physics
25. Plasma Physics
26. Solid State Physics
27. Propellants
28. Propulsion Systems
29. Space Radiation
30. Space Sciences
31. Space Vehicles
32. Structural Mechanics
33. Thermodynamics and Combustion
34. General

## COMMENTS

This compendium lists documented computer programs developed under National Aeronautics and Space Administration or Department of Defense sponsorship, as well as privately developed programs which have been contributed to the COSMIC repository.

The COSMIC staff can prepare abstract listings for a specific subject. Assistance in installing programs can be obtained. Programs accepted by COSMIC meet standards for documentation and operating consistency.

1968-78

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Computer Program Abstracts

**PERSONAL AUTHOR:** N/A

***CORPORATE AUTHOR:** The Hydrologic Engineering Center
U.S. Army Corps of Engineers
609 Second Street
Davis, California 95616

**PUBLISHER:** N/A

**DATE:** April 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts of hydrologic programs from a computer library.

**SCOPE:** Programs developed by the Hydrologic Engineering Center, and available for public release, are included.

**ARRANGEMENT:** None

**INDEXING DEVICES:** Table of Contents

**ABSTRACTS:** Yes **THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** None planned

**NUMBER OF PROGRAMS:** 29

**ENTRY FORMAT:** Title, Program Number, Preparing Agency, Author, Date of Completion, Purpose, Program Specifications, Methods, Equipment Details, Input-Output, and Additional Remarks.

**PRICE:** The compendium is free of charge; programs can be obtained at $60.00 each.

## SUBJECT INDEX

| PROGRAM TOPIC | | PROGRAM TOPIC | |
|---|---|---|---|
| 1. | Flood Hydrograph Package | 16. | Reservoir Capacity |
| 2. | Basin Rainfall and Snowmelt | 17. | Monthly Streamflow Simulation |
| 3. | Unit Graph and Hydrograph | 18. | Daily Streamflow Simulation |
| 4. | Unit Graph and Loss Rate | 19. | Regional Station Event Frequency |
| 5. | Hydrograph Combining and Routing | 20. | Average Annual Damage |
| 6. | Streamflow Routing | 21. | Urban Storm Water Runoff |
| 7. | Balanced Hydrograph | 22. | River - Reservoir Water Quality |
| 8. | Water Surface Profiles | 23. | River - Reservoir System Data Editor |
| 9. | Unsteady Flow Profiles | 24. | Reservoir Temperature Stratification |
| 10. | Spillway Rating and Flood Routing | 25. | River and Reservoir Scour and Deposition |
| 11. | Spillway Rating with Tainter Gates | 26. | Suspended Sediment Yield |
| 12. | Spillway Gate Regulation | 27. | Reservoir Delta Sedimentation |
| 13. | Flood Control and Conservation Simulation | 28. | Deposit of Suspended Sediment |
| 14. | Reservoir System Analysis | 29. | Finite Element Solution of Steady-State Potential Flow |
| 15. | Reservoir Yield | | |

## COMMENTS

The programs described in this compendium are primarily directed towards inland hydrology, but some may be applicable to problems in coastal facility design.

These programs are available to private consulting engineering firms as well as U.S. Government agencies. However, the former are required to file a Memorandum of Understanding with HEC delineating the terms of release of the program.

## BIBLIOGRAPHIC INFORMATION

TITLE: Computer Programs in Marine Science (Key to Oceanographic Records Documentation No. 5)

PERSONAL AUTHOR: Firestone, Mary A.

CORPORATE AUTHOR: U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Environmental Data Service
Washington, D.C. 20007

PUBLISHER: * Superintendent of Documents
Government Printing Office
Washington, D.C. 20402

DATE: February 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of programs in marine science.

SCOPE: Programs are available for public use.

ARRANGEMENT: Abstracts are arranged within broad subject areas.

INDEXING DEVICES: Hardware Index, Language Index, Institutional Index, General Index

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: 2 - 3 years

NUMBER OF PROGRAMS: 483

ENTRY FORMAT: Program Title, Language, Hardware, Input, Output
Documentation, Date, Source, Abstract.

PRICE: $3.00

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Physical Oceanography | 99 | 8. Pollution | 5 |
| 2. Chemistry | 5 | 9. Currents and Transfer Processes | 23 |
| 3. Coastal & Estuarine Processes | 20 | 10. Tides | 4 |
| 4. Engineering | | 11. Waves | 13 |
| a. Suspended Loads at Sea | 4 | 12. Air-Sea Interaction & Heat Budget | 15 |
| b. Soil Test Data Analysis | 1 | 13. Ice | 4 |
| c. Cable Properties | 2 | 14. Sound, General | 14 |
| d. Submersibles | 3 | 15. Sound, Velocity | 7 |
| e. Cable Systems, Static | 9 | 16. Sound, Ray Path | 10 |
| f. Cable Systems, Dynamic | 10 | 17. Navigation and Charting | 50 |
| g. Corer Trajectory, Free Fall | 2 | 18. Graphic Display | 37 |
| 5. Geology & Geophysics | 42 | 19. Time & Spectral Series Analysis | 19 |
| 6. Biology | 21 | 20. Curve Fitting | 9 |
| 7. Fisheries | 46 | 21. Applied Mathematics | 9 |
| | | 22. Data Reduction, Editing, Conversion, Inventory, Retrieval, and Special Input/Output | |

Several of the programs are, in fact, program systems which the user can "tailor" to operate in a variety of related computations by accessing subprogram units.

| Subject | Program System | No. of Subprogram Units |
|---|---|---|
| Coastal Processes | AUGUR-Simulation of Aquatic Ecosystems | -- |
| Geophysics | Soil and Sediment Sample Analysis | 10 |
| Pollution | ECOSTAT -- Ecological Statistics | -- |
| Waves | Water Wave Teaching Aids | 18 |
| Sound, Ray Path | GRASS - Underwater Acoustics Prediction | 7 |
| Navigation & Charting | NOS Scientific Subroutine System | 16 |
| Time Series | ARAND | .00 |
| Data Management | GAS - Generalized Application System | 24 |

## COMMENTS

The nearly 500 programs cataloged represent a good sampling of the computer programs currently in use by marine scientists. The marine engineer will probably find most of the programs not useful. However, the section on engineering contains several important programs for the ocean engineer, and some of the other subject areas may provide useful help with related problems.

All the programs have unlimited distribution. Programs were accepted and listed from 34 federal and state organizations, 12 foreign and 2 private organizations, and 26 universities.

1866-76

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Directory of Computer Programs of Federal Construction Agencies. (Survey of Practice Report No. 9)

**PERSONAL AUTHOR:** N/A

***CORPORATE AUTHOR:** BRAB - Federal Construction Council
National Academy of Sciences
2101 Constitution Avenue N.W.
Washington, D.C. 20418

**PUBLISHER:** N/A

**DATE:** 1970

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Brief descriptions of civil engineering programs.

**SCOPE:** Programs are included from the following agencies: Veterans Administration, Department of the Navy, Post Office Department, General Services Administration, Department of the Air Force, Department of the Army, National Bureau of Standards.

**ARRANGEMENT:** Entries are arranged by issuing federal construction agency.

**INDEXING DEVICES:** Subject Category Index

**ABSTRACTS:** No **THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** Latest revision to be published late in 1976.

**NUMBER OF PROGRAMS:** 704

**ENTRY FORMAT:** Index Reference, Program Title, Computer Language, Type of Computer, Standard Reference, Date of Preparation, Program Director or Sponsor, Objectives and Documentation.

**PRICE:** Price has yet to be determined for new edition.

## SUBJECT INDEX

| | MAJOR SUBJECT | NO. OF PROGRAMS | | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|---|---|
| 1. | Acoustical Reverberation | 1 | 16. | Watershed Reservoirs | 55 |
| 2. | Dredging | 12 | 17. | Runoff | 51 |
| 3. | Hydraulic (Civil) Engineering | 85 | 18. | Construction Management | 9 |
| 4. | Earthwork & Soil Mechanics | 59 | 19. | Personnel Management | 16 |
| 5. | Structural Engineering | 156 | 20. | Program Management | 10 |
| 6. | Surveying and Geodesy | 46 | 21. | Operations Information | 8 |
| 7. | Transportation | 4 | 22. | Concrete Materials | 11 |
| 8. | Computer Utility Routines | 8 | 23. | Steel Materials | 6 |
| 9. | Plotting Routines | 30 | 24. | Mathematical Utilities | 42 |
| 10. | Lighting | 4 | 25. | Mechanical Design | 2 |
| 11. | Electric Power Systems | 8 | 26. | Heating & Air Conditioning | 28 |
| 12. | Engineering Economics | 24 | 27. | Piping and Tanks | 9 |
| 13. | Backwater | 7 | 28. | Turbine Generator Performance | 1 |
| 14. | Flood Control | 24 | 29. | Elevators and Escalators | 1 |
| 15. | Precipitation | 21 | | | |

## COMMENTS

This compendium lists computer programs supplied by the following government agencies:

| | GOVERNMENT AGENCY | NO. OF PROGRAMS | | GOVERNMENT AGENCY | NO. OF PROGRAMS |
|---|---|---|---|---|---|
| 1. | Veteran's Administration Office of Construction | 17 | 5. | Department of the Air Force Director of Civil Engineering | 60 |
| 2. | Department of the Navy Naval Facilities Engineering Command | 16 | 6. | Department of the Army Office of the Chief of Engineers | 568 |
| 3. | Post Office Department Construction Research Branch | 19 | 7. | National Bureau of Standards Building Research Division | 17 |
| 4. | General Services Administration Public Building Services | 7 | | | |

The programs listed cover a wide variety of engineering and management problems related to the design and construction of buildings and other facilities. However, most of the programs are not supported by documentation. This compendium does not indicate the "size" of the programs; many seem to be relatively short, specific programs that facilitate a particular design problem. A few programs are patently trivial. Some sophisticated programs may be obscured by the brevity of their description; others are written in unusual languages or used on older machines.

1560-78

## BIBLIOGRAPHIC INFORMATION

TITLE: Numerical and Computer Methods in Structural Mechanics

PERSONAL AUTHOR: Fenves, S. J. Perrone, N.
Robinson, A. R. Schnobrich, W. C.

CORPORATE AUTHOR: Office of Naval Research
Department of the Navy
Arlington, Virginia 22217

* PUBLISHER: Academic Press
111 Fifth Avenue
New York, New York 10003

DATE: 1973

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Collection of papers, reviews of large programs.

SCOPE: Critical reviews of general-purpose structural mechanics programs.

ARRANGEMENT: Arranged according to the Table of Contents; Part II, Critical Review of General-Purpose Structural Mechanics Programs.

INDEXING DEVICES: Author Index

ABSTRACTS: Yes THEORY: Yes

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 6

ENTRY FORMAT: Introduction, Special Features, Development, Examples and Future Plans.

PRICE: $39.50

## SUBJECT INDEX

**ASKA**

Static, dynamic or nonlinear analysis of flange, membrane, plate, shell, ring, 3-dimensional, or beam structure.

**NASTRAN**

A very large, general purpose structural analysis program.

**DAISY**

General purpose static structural analysis program including thermal gradients.

**STARDYNE**

A package of structural analysis programs using the finite element stiffness method to solve static, dynamic, and stability problems.

**STRUDL**

Static or dynamic analysis of structures plus steel and reinforced concrete design code.

**MARC**

General purpose, nonlinear, finite element analysis of structures with large displacement including plastic flow, creep, and thermal effects.

## COMMENTS

This compendium is a collection of papers presented at a symposium sponsored by the Office of Naval Research. As such, the compendium is more nearly described as an advanced textbook on the relationships between computer technology and structural mechanics. Part II of the text contains reviews of the six structural computer programs listed above.

1666-78

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Research on Computer Applications to Shipbuilding, Volume I and II (COM-75-10930)

**PERSONAL AUTHOR:** Franzetti, Edward
Avondale Shipyard, Inc.
P.O. Box 50280
New Orleans, Louisiana 70150

**CORPORATE AUTHOR:** Maritime Administration
Office of Advanced Ship Development
14th and E Streets, N.W.
Washington, D.C. 20230

* **PUBLISHER:** National Technical Information Service
U.S. Department of Commerce
Springfield, Virginia 22151

**DATE:** May 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts of shipbuilding programs.

**SCOPE:** Programs in active use during 1973-74.

**ARRANGEMENT:** Volume I, Final/Report; Volume II, Catalog of Program Abstracts. Program abstracts arranged by Data Management System Category.

**INDEXING DEVICES:** None

**ABSTRACTS:** Yes **THEORY:** Yes

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** None planned

**NUMBER OF PROGRAMS:** 1,013

**ENTRY FORMAT:** Category, Descriptive Program Title, Source Activity, Engineer's Name, Programmer's Name, Program Status, Security Classification, Language, Hardware, Program Size, Average Running Time, Cost, Documentation Status, and Program Abstract.

**PRICE:** $12.75

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Conceptual Design (17 subgroups) | 69 |
| 2. Preliminary Design (17 subgroups) | 147 |
| 3. Detail Design | |
| Hull (16 subgroups) | 369 |
| Outfitting & Ventilation (16 subgroups) | 33 |
| Electrical (6 subgroups) | 74 |
| Machinery (17 subgroups) | 141 |
| Management (7 subgroups) | 46 |
| Production (6 subgroups) | 54 |
| Purchasing, Expediting, Requisitioning | 1 |
| Testing | 7 |
| Interference Control | 4 |
| Miscellaneous (3 subgroups) | 68 |

## COMMENTS

This compendium is the result of a research project initiated by the Ship Production Committee of the Society of Naval Architects and Marine Engineers and financed largely by funds from the U.S. Maritime Administration. The purpose of the project was to reduce the cost of building ships by using computer programs more effectively. This compendium is a compilation of the computer programs currently available to the shipbuilding industry.

1668-76

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Scientific Program Library Abstracts

**PERSONAL AUTHOR:** N/A

*__CORPORATE AUTHOR:__ Chief, Branch of Computer Sciences and Engineering
Bureau of Mines, Division of ADP
Building 53, Federal Center
Denver, Colorado 80225

**PUBLISHER:** N/A

**DATE:** August 1974

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts from the Bureau of Mines computer library.

**SCOPE:** Includes programs from Communications of the ACM, the UCLA BMD Series, and those developed by ADP personnel.

**ARRANGEMENT:** Entries are arranged by program categories.

**INDEXING DEVICES:** Table of Contents

**ABSTRACTS:** Yes **THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** Irregular

**NUMBER OF PROGRAMS:** 221

**ENTRY FORMAT:** Program Identification and Status Code (which defines where the program originated).

**PRICE:** No charge to government agencies.

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Regression and Curve Fitting | 42 | 7. Simulation and Number Generators | 19 |
| 2. Statistical Analysis | 38 | 8. Time Series Analysis | 12 |
| 3. Matrices and Simultaneous Equations | 17 | 9. Numerical Sorting | 5 |
| 4. Numerical Analysis | 28 | 10. Metallurgical Applications | 7 |
| 5. Special Functions | 13 | 11. Miscellaneous and Utility | 14 |
| 6. Operations Research | 26 | | |

## COMMENTS

This compendium contains an assortment of the general mathematical tools often used by engineers and other scientists, but no programs uniquely for engineering, except for the metallurgical applications. The abstracts describe both independent programs and dependent codes such as subroutines and functions. Most of the programs address a specific problem or specifically defined class of problems so that the brief abstracts adequately describe the entries for most users. However, the highly condensed coding used to summarize the technical description (language, machine, etc.) of the entries is inconvenient for the casual user who has not memorized the code list. There is a series of comparisons between some common mathematical algorithms in the back of the compendium that will interest programmers.

1668-78

## BIBLIOGRAPHIC INFORMATION

TITLE: Shock and Vibration Computer Programs, SVM-10

PERSONAL AUTHOR: Pilkey, Walter, editor
Pilkey, Barbara, editor

*CORPORATE AUTHOR: The Shock and Vibration Information Center, Code 8404
Washington, D.C. 20375

PUBLISHER: Technical Information Division
Naval Research Laboratory

DATE: 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Collection of papers about shock and vibration.

SCOPE: Comprehensive, excludes only those programs not available to the public.

ARRANGEMENT: The volume is arranged in chapters, according to specific classes of problems. At the end of most chapters particular programs credited in the theoretical text are cited, and bibliographic information is provided.

INDEXING DEVICES: Subject Index, Alphabetical Index

ABSTRACTS: Yes THEORY: Yes

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: N/A

NUMBER OF PROGRAMS: 505

ENTRY FORMAT: The program descriptions vary, but an attempt is made to include: Capability, Language, Input, Output, Hardware, Usage, Developer, Availability, and Comments.

PRICE: $25.00

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Aircraft Noise Prediction | 7 |
| 2. Beams | 23 |
| 3. Body Motion, Crash | 8 |
| 4. Bond Graph Method | 2 |
| 5. Cable System | 13 |
| 6. Crash Simulation | 9 |
| 7. Damping Capabilities | 12 |
| 8. Dynamic Stability | 19 |
| 9. Eigenvalue Extraction | 48 |
| 10. Fluid Structure Interaction | 25 |
| 11. Fracture and Fragmentation | 8 |
| 12. Frame Structures | 20 |
| 13. General Purpose Programs | 12 |
| 14. Grillages | 10 |
| 15. Highway Noise | 4 |
| 16. Inertia Matrix Capabilities | 16 |
| 17. Kinematic & Dynamic Design of Mechanisms | 28 |
| 18. Limiting Performance | 3 |
| 19. Liquid Propellant Dynamics | 4 |
| 20. Mechanical and Thermal Shock | 18 |
| 21. Multidegree of Freedom Mechanical Systems | 22 |
| 22. Multiple Energy Domain Systems | 2 |
| 23. Nonlinear Analysis Description & Numerical Stability | 22 |
| 24. Nonlinear Transient Responses of Solids | 16 |
| 25. Offshore Structures | 18 |
| 26. Optimum Design of Dynamic Mechanical Systems | 10 |
| 27. Piping Systems | 12 |
| 28. Random Vibrations | 15 |
| 29. Flexible Rotor Dynamics Analysis | 16 |
| 30. Fluid-Film Bearings | 14 |
| 31. Torsional Vibrations | 6 |
| 32. Seismic Analyses | 17 |
| 33. Shell Analysis | 18 |
| 34. Spacecraft Structures | 7 |
| 35. Test Data Processing | 5 |
| 36. Time Dependent Materials | 11 |
| 37. Torsional Systems | 11 |
| 38. Transfer Functions | 4 |
| 39. Vehicle Simulation | 8 |

## COMMENTS

This book is more an encyclopedia of shock and vibration computer programs than a compendium, because of the technical discussions included in each chapter. It contains critical reviews and summaries of available shock and vibration computer programs.

The book is divided into two sections. In the first section, computer programs suitable for particular classes of problems are considered. Both special and general purpose programs are included. Availability of each program is indicated.

In the second section of the book, the capabilities of readily available general purpose programs are treated. The methods used for solving dynamics problems are outlined and the techniques employed for incorporating various material properties are scrutinized. Programs are evaluated for their application to particular problems.

1666-78

## BIBLIOGRAPHIC INFORMATION

TITLE: Structural Mechanics Software (A Bibliography with Abstracts), NTIS/PS-75/428

PERSONAL AUTHOR: Grooms, David W.

CORPORATE AUTHOR: N/A

* PUBLISHER: National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

DATE: May 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of structural mechanics software.

SCOPE: Abstracts based on documents filed in the NTIS system.

ARRANGEMENT: Program abstracts are scattered throughout the publication.

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 185

ENTRY FORMAT: Title, Corporate Author, Contract, Abstract, Descriptors, Identifier, AD Number, and price, if available from NTIS.

PRICE: $25.00

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Beams | 7 | 9. Large Scale & General Purpose Programs | 34 |
| 2. Buckling and Structural Stability | 16 | 10. Nonlinear Analysis | 9 |
| 3. Cable Systems | 2 | 11. Optimization | 9 |
| 4. Cracks and Stress Concentrations | 5 | 12. Plotting Routines | 3 |
| 5. Disks, Plates and Shells | 34 | 13. Ship Structures | 11 |
| 6. Elevated Temperature Response | 6 | 14. Structural Vibration | 18 |
| 7. Fatigue and Fracture | 2 | 15. Transfer Functions | 3 |
| 8. Impact and Shock Wave Propagation | 10 | 16. Miscellaneous | 16 |

## COMMENTS

The National Technical Information Service (NTIS) is a public distributor of research, development, and engineering reports sponsored by the U.S. Government. Users may select from the list of published compendiums prepared by NTIS or contract for a search in a specific topic. The lack of indices in this compendium offsets the generally complete abstract entries.

## BIBLIOGRAPHIC INFORMATION

TITLE: A Survey of Techniques for the Analysis and Design of Submerged Mooring Systems (Technical Report R815)

PERSONAL AUTHOR: Albertsen, N.D.

*CORPORATE AUTHOR: Civil Engineering Laboratory
Naval Construction Battalion Center
Port Hueneme, California 93043

PUBLISHER: N/A

DATE: August 1974

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of programs for submerged mooring systems.

SCOPE: Computer programs for modeling the response of cable mooring systems to the ocean environment are included.

ARRANGEMENT: The survey is divided into (1) steady-state analysis, (2) dynamic analysis, and (3) cable-strumming analysis and design considerations.

INDEXING DEVICES: None

ABSTRACTS: No THEORY: Yes

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 48

ENTRY FORMAT: Author, Organization, Telephone Number, Program Dimensionality, Program Validation, Remarks, Reference Number.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| Static Environment Models | 28 |
| Dynamic Environment Models | 16 |
| Vortex Shedding Models (Steady Current) | 22 |

## COMMENTS

This is a specialized compendium of computer programs for modeling the response of submerged cable mooring systems to the ocean environment. No index is provided, since the field of programs included is specialized. The compendium lacks adequate indication of such computer requirements as language, storage needed, and running time.

1686-78

## BIBLIOGRAPHIC INFORMATION

TITLE: WES Engineering Computer Programs Library Catalog

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: Engineering Computer Program Library
Special Projects Branch
U.S. Army Engineers Waterways Experiment Station
Vicksburg, Mississippi 39180

PUBLISHER: N/A

DATE: May 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of programs for the civil engineering of inland waterways.

SCOPE: Contains program abstracts pertaining to all aspects of Corps work; also included are abstracts of engineering computer programs developed by sources other than the Corps of Engineers, but which pertain to Corps activities.

ARRANGEMENT: Abstracts are arranged numerically.

INDEXING DEVICES: Originating Source Index, Subject Index, Title Index

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Irregular

NUMBER OF PROGRAMS: 163

ENTRY FORMAT: Title, Program Number, Preparing Agency, Date of Completion, Purpose, Program Specifications, Methods, Equipment Details, Input-Output, and Additional Remarks.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Backwater Profiles | 14 | 11. Locks & Waterways | 10 |
| 2. Conduit & Open Channel Flow | 31 | 12. Miter & Tainter Gates | 9 |
| 3. Contours | 2 | 13. Nonlinear Equations | 2 |
| 4. Coordinate Geometry | 3 | 14. Overflow Spillways | 5 |
| 5. Critical Path Method | 6 | 15. Plotting Routines | 4 |
| 6. Dredging | 3 | 16. Slope Stability | 3 |
| 7. Embankments | 3 | 17. Structural Analysis | 16 |
| 8. Finite Element Method | 13 | 18. Tidal Currents | 2 |
| 9. Flexural Strength of Concrete | 2 | 19. Water Temperature | 2 |
| 10. Gravity Dams | 4 | 20. Miscellaneous | 30 |

## COMMENTS

The programs described in this compendium address the civil engineering of inland waterways, including channels, dams, navigation locks, and associated rainfall and drainage problems. WES/ECPL is the central repository and distributor of engineering computer programs for the entire Corps of Engineers.

1666-78

# SECTION 2
# UNIVERSITIES AND PUBLIC INSTITUTIONS

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Compendium of Structural Mechanics Computer Programs

**PERSONAL AUTHOR:** Perrone, Nicholas

**CORPORATE AUTHOR:** The Catholic University of America
Civil and Mechanical Engineering Department
Washington, D.C. 20017

**PUBLISHER:** * National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22151

**DATE:** April 1971

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts of structural mechanics programs.

**SCOPE:** Programs compiled from 72 public and private sources.

**ARRANGEMENT:** Programs are arranged according to the author's Descriptor Categories in Structural Mechanics, using a three-letter code to designate the subject area.

**INDEXING DEVICES:** Author Index
Organizational Index

**ABSTRACTS:** Yes **THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** None planned

**NUMBER OF PROGRAMS:** 563

**ENTRY FORMAT:** Program Title, Brief Synopsis, Hardware, Language, Size of Program, Confidence Index, Author, Organization, and Address.

**PRICE:** $6.00

## SUBJECT INDEX

The programs in this compendium are described by a series of 3-letter codes. The first letter identifies the type of structure to be analyzed. The second letter identifies the kind of load applied to the structure. The third letter indicates the analytical model used in the program. The code lists are as follows:

| Letter | Structure | Load | Analytical Model |
|---|---|---|---|
| A | Beam/Rod/Cable | Static - Concentrated | Elastic |
| B | Shaft | Static - Uniform/Pressure | Perfectly Plastic |
| C | Column | Static - Other | Strain Hardening |
| D | Grid | Impulsive | Limit Analysis |
| E | Frame/Truss | Periodic | Viscoelastic - Strain Rate |
| F | Ring/Arch | Pressure Pulse | Viscoelastic |
| G | Membrane | Centrifugal/Inertial | Inhomogeneous |
| H | Disk/Plate - Circular | Natural Vibrations/Eigenvalues | Orthotropic |
| I | Disk/Plate - Rectangular | Thermal | Geometric Nonlinear |
| J | Disk/Plate - Other | Acoustic | Material Nonlinear |
| K | Tube/Pipe | Electromagnetic | Instability/Buckling |
| L | Shell - Cylindrical | Radiation | Stress Concentration |
| M | Shell - Spherical | Random | Wave Propagation |
| N | Shell - Axi-symmetric | | Fracture |
| O | Shell - Other | | Fatigue |
| P | Continuum | | Acoustic |
| Q | | | Optimization |
| R | | | Biomechanics |
| Y | Combination | Multiple | Combination |
| Z | Other | Other | Other |

A program may satisfy more than one code triplet.

## COMMENTS

This compendium is one of several structural mechanics computer program compendiums, which parallels the proliferation of structural programs as the understanding of powerful new computational algorithms becomes more widespread. The three-level program classification network is a useful concept. However, its implementation in an index separate from the table of abstracts would have eliminated multiple entries. Most of the programs in this volume solve a specific problem. Special-purpose programs are more efficient than the general programs.

## BIBLIOGRAPHIC INFORMATION

TITLE: Computer Programs for Engineering Design

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

PUBLISHER: N/A

DATE: April 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Brief descriptions of programs used in oceanographic research.

SCOPE: Nonproprietary programs used at Woods Hole.

ARRANGEMENT: None

INDEXING DEVICES: None

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 15

ENTRY FORMAT: Function, Language, Programmer, and Woods Hole User.

PRICE: No charge

## SUBJECT INDEX

| PROGRAM TOPIC | PROGRAM TOPIC |
|---|---|
| 1. Single point moored buoy systems | 8. Relative location of three acoustic beams |
| 2. Single point subsurface mooring system | 9. Acoustic refraction coefficients |
| 3. Wave equation for parabolic approximation | 10. Reflected sound intensity |
| 4. Acoustic ray tracing | 11. Sound absorption characteristics |
| 5. Error in acoustic navigation | 12. Rays through a lens system |
| 6. Navigation using Doppler cycle counts | 13. Spectrum analyzer plotting package |
| 7. Navigation using travel time of a pulse | 14. Histogram of ambient noise level distribution |
| | 15. General plotting package |

## COMMENTS

The programs in this compendium address specific technical problems in ocean science. The current user at WHOI should be contacted for additional details.

NOTE: Included in 3-ring binder for protection.

## BIBLIOGRAPHIC INFORMATION

TITLE: Fortran Graphics Program for Physical Oceanographic and Time Series Data (Marine Technical Report 46)

PERSONAL AUTHOR: Kramer, William P.
Weisberg, Robert H.

* CORPORATE AUTHOR: Graduate School of Oceanography
NOAA Sea Grant
University of Rhode Island

* PUBLISHER: URI Marine Advisory Service
Narragansett Bay Campus
Narragansett, Rhode Island 02882

DATE: N/A

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of graphics programs for time series oceanographic data.

SCOPE: Programs formulated at URI to: 1) plot variables typically sampled by physical oceanographers and 2) prepare plots of publishable quality.

ARRANGEMENT: None

INDEXING DEVICES: Table of Contents

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: N/A

NUMBER OF PROGRAMS: 7

ENTRY FORMAT: Program Title, Purpose, Control Cards, Data Cards, Time Card, Printed Output Sample, Illustrations.

PRICE: No charge

## SUBJECT INDEX

1. MULTYPLTS -- displays any number of time series.
2. OVERPLOT - displays two time series on the same set of axes.
3. STICK -- reads Cartesian coordinate components and displays them as a time series of resultant vectors.
4. LINLIN - plot series of X, Y points on linear axes.
5. LINLOG - plots a variable on a linear axis versus frequency and period on a logarithmic axis.
6. LOGLIN - plots two variables on a logarithmic axis versus frequency and period on a linear axis.
7. SPECIALL - plots a single variable on a linear Cartesian coordinate where the X-axis is frequency and period.

## COMMENTS

This compendium provides detailed documentation of a package of time series plotting programs available at the computing center of the University of Rhode Island (URI). The programs were originally written to plot variables typically sampled by physical oceanographers and prepare plots of publishable quality, although they may be used in wider applications.

Complete listings of the programs form an appendix to the compendium for users who do not have access to the URI computer.

## BIBLIOGRAPHIC INFORMATION

TITLE: Masterlist, Stanford University

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: Stanford Center for Information Processing
Stanford University
Stanford, California 94305

PUBLISHER: N/A

DATE: January 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of programs available at a university computer center.

SCOPE: Contains permanent programs maintained by the computer center as well as emphemeral contributions of computer users.

ARRANGEMENT: Grouped alphabetically within implicit categories.

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: N/A

NUMBER OF PROGRAMS: 206

ENTRY FORMAT: Program Title, Purpose, Search Keys, Share Code, Type, Language, Source, Also Needs, Core and Documentation.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Computer Utility | 30 | 9. Matrix and Vector Operation | 28 |
| 2. Data Handling | 13 | 10. Number Manipulations | 20 |
| 3. Differential Equations | 5 | 11. Optimization | 19 |
| 4. Econometrics | 4 | 12. Other Curve Fitting Techniques | 5 |
| 5. Eigenvalues and Eigenvectors | 14 | 13. Parameter Approximation & Smoothing | 7 |
| 6. Fourier Transforms | 3 | 14. Plotting | 3 |
| 7. Integration | 4 | 15. Probability & Statistics | 6 |
| 8. Least Squares | 5 | 16. Roots of Equations | 40 |

## COMMENTS

The programs described in this listing represent the available library at the Stanford Center for Information Processing as of January 19, 1976. They are all mathematical routines. The sequence of alphabetical order for the program names suggests that the programs have been sorted categorically. The category names are not given.

## BIBLIOGRAPHIC INFORMATION

TITLE: Software Catalog and Publications Index

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: University of Washington
Academic Computer Center
Seattle, Washington 98195

PUBLISHER: N/A

DATE: June 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Titles of programs in the Academic Computer Center Library.

SCOPE: Contains permanent programs maintained by computer center, as well as ephemeral contributions of computer-users.

ARRANGEMENT: Composite alphabetical cross-reference index to software and publications.

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Irregular

NUMBER OF PROGRAMS: 530

ENTRY FORMAT: Program Title, Language, Descriptive Words

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Computer Utility | 193 | 3. Business | 32 |
| 2. Mathematical Routines | | 4. Simulation | 21 |
| Probability and Statistics | 84 | | |
| Curve Fitting | 68 | 5. Plotting & Graphics | 14 |
| Linear Algebra | 43 | | |
| Roots of Functions | 36 | 6. Engineering | 12 |
| Optimization | 27 | | |

## COMMENTS

Program descriptions range from a phrase to a paragraph. The combination of catalog and index produces redundant entries, but allows the user access to a description within the single alphabetic listing. The catalog aslo includes entries for publications of the Academic Computer Center that are not computer programs.

## BIBLIOGRAPHIC INFORMATION

TITLE: Structural Mechanics Computer Programs: Surveys, Assessments, and Availability

PERSONAL AUTHOR: Pilkey, W.
Saczalki, K.
Schaeffer, H.

CORPORATE AUTHOR: Symposium held at the University of Maryland, June 1974

* PUBLISHER: University of Virginia Press
Charlottesville, Virginia 22904

DATE: 1974

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Collection of papers about structural mechanics programs.

SCOPE: Programs included from all segments of the structural engineering domain.

ARRANGEMENT: The volume is arranged into chapters, according to specific classes of problems. Particular programs are cited in the text, and bibliographic information is provided in various formats.

INDEXING DEVICES: Subject Index of Structural Mechanics Computer Programs;
Alphabetical Index

ABSTRACTS: Yes THEORY: Yes

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 625

ENTRY FORMAT: The program descriptions included in the chapters vary, but an attempt is made to include: Capability, Language, Input, Output, Hardware, Usage, Developer, Availability, and Comments.

PRICE: $20.00

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Aeroelasticity | 18 |
| 2. Beams | 20 |
| 3. Bridge Systems | 9 |
| 4. Circular Plates | 3 |
| 5. Composite Structure | 19 |
| 6. Cross-Section Properties & Stress | 19 |
| 7. Disks | 1 |
| 8. Extension Members | 1 |
| 9. Fracture Mechanics | 20 |
| 10. General Purpose Programs | 40 |
| 11. Girder Systems | |
| a. Simple Span, Wide Flange Beam | 12 |
| b. Continuous Span, Wide Flange Beam | 15 |
| c. Simple Span Plate | 11 |
| d. Continuous Span Plate | 10 |
| e. Simple Span, Prestressed Concrete Beams | 23 |
| f. Continuous Span, Prestressed Concrete Beams | 10 |
| 12. Grillages | 5 |
| 13. Information Retrieval & Dissemination | 2 |
| 14. Integrated Systems | 3 |
| 15. Nonlinear | |
| a. General Purpose | 6 |
| b. Wave Propagation | 14 |
| c. Shells of Revolution | 19 |
| 16. Optimization | 26 |
| 17. Piping Systems | 15 |
| 18. Plastic Analysis | 9 |
| 19. Pre- and Postprocessors | 75 |
| 20. Rectangular Plates | 9 |
| 21. Rotor-Bearing Systems | |
| a. Critical Speed | 3 |
| b. Unbalance Response | 7 |
| c. Stability | 6 |
| d. Balancing | 2 |
| 22. Shell, Thin Wall | 40 |
| 23. Ship Structures | 41 |
| 24. Shock Wave Propagation | |
| a. One Dimension | 5 |
| b. Two Dimensions | 14 |
| 25. Springs | 5 |
| 26. Structural Stability | 19 |
| 27. Thermal Stress and Creep | 20 |
| 28. Thick Wall Shell | 13 |
| 29. Torsional Systems | 8 |
| 30. Transient Analysis | 34 |
| 31. Viscoelastic Structures | 12 |

## COMMENTS

The program descriptions in this compendium were prepared for a symposium held at the University of Maryland in June, 1974. Part I of the compendium gives comparative reviews of the programs considered. It is divided into nineteen chapters following the subject headings listed above. The nine chapters in Part II deal with the development and dissemination of large user-oriented computer programs. Part III has ten chapters dealing with preprocessing programs for automatically "setting up" data for the structural programs and for postprocessing and display of the computer results. The final four chapters form Part IV, a discussion of computer trends for structural design.

1600-75

## BIBLIOGRAPHIC INFORMATION

TITLE: Summary of Pacific Northwest Laboratory Models Applicable to Regional Siting & Nuclear Technology Department Computer Codes

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: Battelle
Pacific Northwest Laboratories
Battelle Boulevard
Richland, Washington 99352

PUBLISHER: N/A

DATE: N/A

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts and title listing of nuclear technology programs and related environmental topics.

SCOPE: Programs developed by Battelle PNL, under various contracts.

ARRANGEMENT: Broad Subject Categories

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None

NUMBER OF PROGRAMS: 68

ENTRY FORMAT: Varies

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Planning Models | 6 |
| 2. Surface Water Models | 6 |
| 3. Data Models | 6 |
| 4. Ground Water Models | 3 |
| 5. Atmospheric Models | 12 |
| 6. Nuclear Technology | |
| a. Neutron Monte Carlo Codes | 4 |
| b. 1-Dimensional Neutron Transport & Diffusion | 4 |
| c. 2-Dimensional Neutron Transport & Diffusion | 2 |
| d. Neutron Cross Section Evaluation & Manipulation | 6 |
| e. Neutron Cross Section Cell Averaging | 7 |
| f. Gamma Shielding | 2 |
| g. Isotope Depletion | 3 |
| h. Risk Analysis | 4 |
| i. Fuel Cycle Economic Analysis | 3 |

## COMMENTS

This compendium is divided into two parts. Computer models of physical or social systems used in forecasting, planning or analysis are abstracted in the first. The second is a list of program names relating to nuclear technology and arranged in general groupings.

NOTE: Included in 3-ring binder for protection

1666-78

## BIBLIOGRAPHIC INFORMATION

**TITLE:** University of Colorado Program Compendium, 1976

**PERSONAL AUTHOR:** N/A

***CORPORATE AUTHOR:** Computing Center
University of Colorado
Boulder, Colorado 80302

**PUBLISHER:** N/A

**DATE:** May 24, 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Brief descriptions of programs in a university computer library.

**SCOPE:** Contains permanent programs maintained by Computer Center, as well as ephemeral contributions of computer users.

**ARRANGEMENT:** Alphabetical by program title.

**INDEXING DEVICES:** Alphabetical Title Index

**ABSTRACTS:** Yes **THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** Irregular, upon request.

**NUMBER OF PROGRAMS:** 671

**ENTRY FORMAT:** Program Title, Purpose, Supporting Group, Source Code Location, Object Code Location.

**PRICE:** $25.00

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Arithmetic Routines | 2 | 7. Probability & Statistics | 67 |
| 2. Elementary Functions | 4 | 8. Operations Research | 13 |
| 3. Polynomials & Series | 8 | 9. Computer Software | 240 |
| 4. Differential Equations | 13 | 10. Scientific Applications | 5 |
| 5. Interpolation & Approximation | 33 | 11. Engineering Applications | 115 |
| 6. Matrix Operations | 65 | 12. Business Applications | 40 |

## COMMENTS

This compendium is a listing of the programs and software stored on the library tapes of the computer at the University of Colorado as of March, 1976. It includes commercially available and proprietary programs, and contributions of professors and students. There is no way of evaluating the quality, correctness, and life span of any program.

1005-76

## BIBLIOGRAPHIC INFORMATION

TITLE: WHIMPER, A Library of Time Series Programs, University of Washington, for Use on CDC 6400 Computer

PERSONAL AUTHOR: Irish, James D. Levine, Murray
Bendiner, Donna J. Zeh, Judy

* CORPORATE AUTHOR: Applied Physics Laboratory
University of Washington
Seattle, Washington 98195

PUBLISHER: N/A

DATE: February 12, 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: A user's manual for geophysical time series programs.

SCOPE: Programs in Fortran IV, for use on CDC 6400, GEOTAPE System, available at University of Washington.

ARRANGEMENT: Random arrangement of actual program descriptions within the narrative, which can be located through the use of the Title Index.

INDEXING DEVICES: Title Index

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 29

ENTRY FORMAT: Narrative of user instructions and program output.

PRICE: N/A

## SUBJECT INDEX

| | PROGRAM TOPIC |
|---|---|
| 1. | ARCHIVE - Writes Geotape |
| 2. | CCCOH - Cal-Comp plot of coherence |
| 3. | COPYGEO - Copies Geotape |
| 4. | GEOPRNT - Prints Geotape |
| 5. | GEOTAPE - Descriptive introduction |
| 6. | GNCOS - Generates sum of cosines |
| 7. | GNFIL - Generates filter |
| 8. | HARM - Fourier transform |
| 9. | IFTPER - Computes FFT periodogram |
| 10. | ISPSMD - Smoothes periodogram |
| 11. | LGAX - Log-Log plot of spectra |
| 12. | NCONVL - Calculates convolution product |
| 13. | NCROSC - Calculates cross correlation |
| 14. | NTRMAT - Cross spectral matrix transformation |
| 15. | PCROSP - Cross spectra by FFT |
| 16. | PRPLOT - Printer plot of coherence |
| 17. | PRCOH - Printer plot of series |
| 18. | RETREVE - Reads Geotape |
| 19. | SPECTRA - Descriptive introduction |
| 20. | TAPER - Applies cosine taper to series |
| 21. | TIDADM - Calculates tidal admittance |
| 22. | TIDES - Descriptive information |
| 23. | TIDFIL - Generates anti-tide filter |
| 24. | TIDHAR - Generates tide from tidal constants |
| 25. | TIDPOT - Generates tide potential |
| 26. | TIDRSP - Prediction from response weights |
| 27. | TIDSPC - Transform at tidal frequencies |
| 28. | TIDWTS - Calculates response weights |
| 29. | UNSORT - Operates on fourier |

## COMMENTS

This compendium contains a library of time series programs available on the University of Washington, CDC computer for manipulating, storing, and retrieving geophysical data. It is primarily a manual for using Whimper on the U. W. computer system. Interspersed with this material are details about each program.

1666-78

# SECTION 3
# CORPORATIONS AND INDUSTRIAL ASSOCIATIONS

## BIBLIOGRAPHIC INFORMATION

TITLE: APEC Program Abstracts

PERSONAL AUTHOR: N/A

*CORPONATE AUTHOR: Automated Procedures for Engineering Consultants, Inc.
Grant-Deneau Tower
Suite M-15
Dayton, Ohio 45402

PUBLISHER: N/A

DATE: N/A

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Detailed abstracts of programs for designing building utility systems.

SCOPE: Programs available only to APEC members.

ARRANGEMENT: Alphabetical by title of program.

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Irregular

NUMBER OF PROGRAMS: 6

ENTRY FORMAT: Introduction, Objectives, Limitations, Organization, Operation, Errors, Options, Input and Sample.

PRICE: No charge

## SUBJECT INDEX

PROGRAM TOPIC

1. HCC III - Heating and Cooling Load Calculation
2. SUPERDUCT - Aid in the Design of Air Duct Systems
3. MOIP - Pipe Sizing and Cost Analysis Program
4. FEEDER II - Design and Analysis of Common Electrical Feeder Circuits
5. LIGHTING II - Design and Analysis of Interior Lighting
6. SPECS - Editing and Preparation of Final Contract Specifications

## COMMENTS

APEC is an outgrowth of a computer applications conference held by Heating/Piping/Air Conditioning Magazine. The result was a cooperative effort of program development oriented toward engineering consultants' needs in the design of building systems. All of the programs are well documented, and the abstracts are easily followed.

1660-76

## BIBLIOGRAPHIC INFORMATION

**TITLE:** CEPA Library - Program Title Listing

**PERSONAL AUTHOR:** N/A

***CORPORATE AUTHOR:** Civil Engineering Program Applications
P.O. Box 1632
Rockville, Maryland 20850

**PUBLISHER:** N/A

**DATE:** 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Title listing of civil engineering programs.

**SCOPE:** Contains programs developed by CEPA members. The programs are only made available to contributing CEPA members on a point basis.

**ARRANGEMENT:** Broad subject divisions determined by structure type, further separated into sections.

**INDEXING DEVICES:** None

**ABSTRACTS:** No **THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** None planned

**NUMBER OF PROGRAMS:** 477

**ENTRY FORMAT:** Numerical Designation, Program Title

**PRICE:** No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Geometry/Highways (18 subgroups) | 110 | 7. Graphics (5 subgroups) | 20 |
| 2. Bridge (32 subgroups) | 85 | 8. Traffic and Transit (10 subgroups) | 12 |
| 3. Buildings (43 subgroups) | 97 | 9. Miscellaneous (12 subgroups) | 48 |
| 4. Geotechnical (12 subgroups) | 7 | | |
| 5. Sanitary-Hydraulics (18 subgroups) | 59 | | |
| 6. Management Division (15 subgroups) | 39 | | |

## COMMENTS

This compendium is a listing of the programs contributed by, and available to, the members of the Civil Engineering Program Applications group. Programs are described by name only within topical categories.

Abstracts of individual programs are for sale. The programs, however, are only available to CEPA members on a "point" system. Members receive "points" for contributing programs that are used by other members and "cash in" their points in order to obtain programs contributed by other members. Particfpation of U.S. Government agencies as members is encouraged.

## BIBLIOGRAPHIC INFORMATION

TITLE: A Collection of Computer Program Literature

PERSONAL AUTHOR: Bird, J. Dexter, compiler

* CORPORATE AUTHOR: EG&G Washington Analytical Services Center, Inc.
Hydrospace-Challenger Group
2150 Fields Road
Rockville, Maryland 20850

PUBLISHER: N/A

DATE: 1976

* THIS IS AN UNPUBLISHED COMPILATION.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Miscellaneous, fragile lists and abstracts of less than 10 programs bound together for protection.

SCOPE: Fourteen small compendiums.

ARRANGEMENT: Subject area and contributor.

INDEXING DEVICES: Table of Contents

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 46

ENTRY FORMAT: Varies

PRICE: N/A

## SUBJECT INDEX


| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| **Oceanography** | |
| 1. C.S. Draper Laboratory | 3 |
| 2. Massachusetts Institute of Technology | 3 |
| 3. University of New Hampshire | 7 |
| **Offshore Structures** | |
| 4. Brown and Root | 4 |
| 5. EXXON Production Research Corp. | 2 |
| **Partial Differential Equations** | |
| 6. Physics International (Continuum Mechanics Program) | 6 |
| 7. Scientific Computing Consulting Services (General Purpose Partial Differential Equation Program) | 1 |
| **Simulation** | |
| 8. Marathon Oil Co. | 4 |
| **Structural Analysis** | |
| 9. Atkins Research and Development (Large Scale General Purpose Program) | 1 |
| 10. Concrete Reinforcing Steel Institute (Reinforced Concrete) | 9 |
| 11. Digital Analysis Consultants (Large Scale General Purpose Program) | 1 |
| 12. Hugh M. O'Neil Co. (Reinforced Concrete) | 2 |
| 13. MARC Analysis Research Corp. (Large Scale General Purpose Program) | 2 |
| 14. University of Utah (Seismic Analysis) | 1 |


## COMMENTS

EG&G Washington Analytical Services Center, Inc. requested a number of companies, universities, and organizations to supply compendiums of engineering computer programs. The responses varied greatly in both size and subject area. Some were small, unbound listings, or descriptions of a few programs. These have been organized into one volume for easy reference.

1666-76

## BIBLIOGRAPHIC INFORMATION

TITLE: Computer Applications in the Automation of Shipyard Operation and Ship Design; Volume 2, Computer Applications in Shipping and Shipbuilding

PERSONAL AUTHOR: Fujita, Y., Lind, K. and Williams, T. J., editors

CORPORATE AUTHOR: N/A

* PUBLISHER: North-Holland/American Elsevier
52 Vanderbuilt Avenue
New York, New York 10017

DATE: 1974

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Collection of papers from IFIP/IFAC/JSNA Joint Conference.

SCOPE: Only programs used in shipping and shipbuilding.

ARRANGEMENT: Papers are grouped under seven major headings.

INDEXING DEVICES: Author Index

ABSTRACTS: Yes THEORY: Yes

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Next planned conference in May, 1976.

NUMBER OF PROGRAMS: 55

ENTRY FORMAT: Information varies according to the author of the individual papers.

PRICE: $62.50

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Design-Production Systems | |
| Large Scale Multipurpose Programs | 3 |
| Miscellaneous | 3 |
| 2. Ship Performance | |
| Propeller-Propulsion Systems | 3 |
| Miscellaneous | 2 |
| 3. Automated Facilities | |
| Computer Systems | 3 |
| Numerical Control Applications | 3 |
| 4. Planning & Control Systems | |
| Management Planning | 6 |
| 5. Structural Analysis & Design | 4 |
| Finite Element Methods | 6 |
| Ship Analysis & Design | 2 |
| 6. Ship Design | |
| Optimization | 6 |
| Interactive Systems | 3 |
| Miscellaneous | 2 |
| 7. Surface Generation | |
| NC Language, etc. | 9 |

## COMMENTS

This publication is the proceedings of the second IFIP/IFAC/JSNA joint conference on Computer Applications in Shipping and Shipbuilding, held in Tokyo, Japan in August of 1973.

The primary emphasis of this conference was the automation of shipyard operation and ship design. Many of the papers are related to numerically controlled machine tools and automated material monitoring systems.

## BIBLIOGRAPHIC INFORMATION

**TITLE:** An Inventory of Current Mathematical Models of Scientific Data-Gathering Moors (HCI-TR-4450-0001)

**PERSONAL AUTHOR:** Dillon, David B.

***CORPORATE AUTHOR:** Hydrospace-Challenger, Inc.
2150 Fields Road
Rockville, Maryland 20850

**PUBLISHER:** N/A

**DATE:** February 1973

* **OBTAIN FROM NEW SOURCE:** EG&G Washington Analytical Services Center, Inc.
2150 Fields Road
Rockville, Maryland 20850

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Tabular summaries of computer models of scientific and oceanographic data-gathering moorings.

**SCOPE:** Excludes ship moorings, military moorings, unprogrammed models, non-mooring cable dynamics, obsolete models, purely static models, and cable strumming.

**ARRANGEMENT:** Section I is an introduction; Section II is a discussion of the various types of dynamic models; Section III is an evaluation of the present state of scientific and oceanographic mooring modeling; and Section IV contains tabular summaries of the inventoried models.

**INDEXING DEVICES:** None

**ABSTRACTS:** Yes **THEORY:** Yes

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** None planned

**NUMBER OF PROGRAMS:** 24

**ENTRY FORMAT:** Section IV: Mooring Description, Approach, Evaluation, Reference, Analysis, Program, and Experimental Support.

**PRICE:** No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. One-Dimensional Analysis | 4 | 5. Time Dependent Current | 1 |
| 2. Two-Dimensional Analysis | 4 | 6. Mode-Shape Programs | 2 |
| 3. Three-Dimensional Analysis | 2 | 7. Static Configuration Programs | 7 |
| 4. Deployment Programs | 4 | | |

## COMMENTS

This is a specialized compendium of computer programs for modeling scientific and oceanographic data gathering moorings in the ocean environment.

## BIBLIOGRAPHIC INFORMATION

TITLE: 100 Word Extracts of Dow Engineering Company Computer Programs

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: Dow Engineering Company
3636 Richmond Avenue
Houston, Texas 77027

PUBLISHER: N/A

DATE: August 1971

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts from a computer library.

SCOPE: Programs are proprietary to the corporate author.

ARRANGEMENT: None

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 146

ENTRY FORMAT: Program Title, Number, Documentation Reference, Key words, Hardware, Language, Abstract.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Administration, Accounting Etc. | 33 |
| 2. Chemistry & Distillation | 5 |
| 3. Civil Engineering & Architecture | |
| a. Steel Structures | 9 |
| b. Concrete Structures | 2 |
| c. Footings, Piles, & Foundations | 23 |
| d. Miscellaneous | 5 |
| 4. Piping Systems, Pumps, Valves | 15 |
| 5. Pressure Vessels | 5 |
| 6. Thermal Design & Heat Exchangers | 9 |
| 7. Instrumentation, Meters & Panels | 7 |
| 8. Electrical Power Systems | |
| a. Machinery Problems, various | 5 |
| b. Conductor Problems, various | 9 |
| c. Transformers, Batteries, Poles, & Lighting | 5 |
| 9. Mathematical Utilities | 3 |
| 10. Computer Utilities | 11 |

## COMMENTS

This compendium was prepared for the internal usage of the Dow Engineering Company. Availability of the programs and documentation is by negotiation with the company. It appears to represent a library of programs for planning, designing, constructing and operating a chemical refinery.

# SECTION 4
# COMPUTER SERVICE BUREAUS

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Boeing Computer Services

**PERSONAL AUTHOR:** N/A

*** CORPORATE AUTHOR:** Boeing Computer Services
7598 Colshire Dr.
McLean, Virginia 22101

**PUBLISHER:** N/A

**DATE:** 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts of programs in a computer service library.

**SCOPE:** Includes programs accessible from Boeing Computer Services.

**ARRANGEMENT:** Program information is arranged by Subject Category.

**INDEXING DEVICES:** None

**ABSTRACTS:** Yes **THEORY:** No
**ASSOCIATED SEARCH ASSISTANCE:** No
**UPDATE INTERVAL:** None planned
**NUMBER OF PROGRAMS:** 58

**ENTRY FORMAT:** Program Title and Descriptive Abstract.

**PRICE:** No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Computer Science | 6 |
| 2. Test Data Systems | 1 |
| 3. Manufacturing Design and Control | 11 |
| 4. Electronic/Electrical | |
| Circuit Analysis | 4 |
| Electronic Design Aids | 10 |
| Digital Logic Design Aids | 1 |
| 5. Civil Engineering | |
| General | 7 |
| Structural | 11 |
| 6. Mechanical Engineering Control Systems | 1 |
| 7. Mathematical Routines | 6 |

## COMMENTS

This compendium contains a small collection of specialized engineering and mathematical programs for solving common technical problems. The short abstracts provide the user with enough information to identify a useful program. Programs are only available for use on Boeing's computer.

Compendium from BCS Richland is also given coverage in this section.

1695-78

## BIBLIOGRAPHIC INFORMATION

TITLE: CYBERNET Program Library Catalog

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: CYBERNET Publications
HQW05F, P.O. Box 0
Minneapolis, Minnesota 55449

PUBLISHER: N/A

DATE: 1972, Rev. A. is dated 1974

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Advertising brochure for a computer service.

SCOPE: Includes programs proprietary to Control Data Corporation, and others that have been obtained by them for users of the CYBERNET Computer Service.

ARRANGEMENT: Program abstracts are arranged within six broad subject headings.

INDEXING DEVICES: None

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: Yes, CDC will search the applications library if you are a user.

UPDATE INTERVAL: Varies

NUMBER OF PROGRAMS: 37

ENTRY FORMAT: Program Features, Variety of Applications, Method of Analysis, Program Access, and Support.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Structural Analysis | 13 |
| 2. General Engineering and Science | 6 |
| 3. Data and Project Management | 5 |
| 4. Operations Research and Mathematics | 8 |
| 5. Energy Sciences | 3 |
| 6. Graphics | 2 |

## COMMENTS

Although the number of programs listed is small, some solve broad classes of problems in great detail.

Most of these programs would not be suitable for obtaining a "quick-check" approximate solution.

Two other compendiums describing engineering programs available from the CDC Computer Service are:

KRONOS Library Programs, and
Systems Professional Master User Information
and Operational Instructions

1686-76

## BIBLIOGRAPHIC INFORMATION

TITLE: Guide to Application Programs for the Petroleum Industry (5001.04)

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: General Electric Company
Information Services Business Division
401 North Washington Street
Rockville, Maryland 20850

PUBLISHER: N/A

DATE: December 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Advertising abstracts from a computer service.

SCOPE: These programs come from many sources, and they are available to users of the G.E. Service.

ARRANGEMENT: Arranged within broad subject categories, i.e., Business Management Programs, Financial/Economic Applications, Marketing, Exploration and Production, Refining/Petrochemical.

INDEXING DEVICES: Title Index

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 184

ENTRY FORMAT: Title of Program, Identification and Description.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| **1. Business Management** | |
| Business Analysis | 2 |
| Data Base Management | 2 |
| Statistical Analysis | 2 |
| Simulation | 5 |
| **2. Financial & Economic** | |
| Planning & Analysis | 12 |
| Economic Evaluation | 2 |
| Investment Management | 9 |
| Currency Exchange | 1 |
| **3. Marketing** | |
| Telephone Information Processing | 1 |
| PETROEX System | 1 |
| Warehousing | 6 |
| Forecasting | 2 |
| **4. Exploration & Production** | |
| Reservoir Evaluation | 11 |
| Production Scheduling | 1 |
| Project Management | 3 |
| Log Analysis | 13 |
| Pollution Control | 3 |
| Pipeline | 24 |
| Riser Design | 1 |
| Costing | 1 |
| Drilling Assistance | 30 |
| Pumping | 1 |
| Inventory Control | 6 |
| **5. Refining/Petrochemical** | |
| Process Design | 3 |
| Plant Design | 16 |
| Plant Operations, | 24 |
| Data Management System | 1 |
| Preventive Maintenance | 1 |

## COMMENTS

Program descriptions are brief and concise but contain enough information for most users to be able to determine if the program will meet their needs. Although the primary thrust of this compendium is toward petroleum industry applications, the programs are sufficiently general in scope to be applicable to a wide range of problems. Programs are only available for use on Boeing's computer.

Telephone Information Processing allows data to be transmitted by users from a Touch-Tone telephone with computer output transmitted as a voice response. The PETROEX System is a set of computer routines available to participants for exchanging petroleum product data.

NOTE: Included in 3-ring binder for protection.

1866-78

## BIBLIOGRAPHIC INFORMATION

TITLE: INFONET Library of Application Programs

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: INFONET
Computer Sciences Corporation
650 North Sepulveda Boulevard
El Segundo, California 90245

PUBLISHER: N/A

DATE: 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Advertising brochure for a computer service.

SCOPE: Includes programs proprietary to CSC, and others that have been obtained by them for users of the INFONET Computer Service.

ARRANGEMENT: Section I describes programs and programming tools that are supported nationally. Section II covers locally supported programs. Both sections are arranged by broad subject areas.

INDEXING DEVICES: Table of Contents

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Varies

NUMBER OF PROGRAMS: 554

ENTRY FORMAT: Use, Program Name, Purpose, Output.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Business and Financial Management | 9 | 5. Project Management | 15 |
| 2. Labor and Equipment Scheduling | 7 | 6. Simulation | 4 |
| 3. Data Management and Display Systems | 16 | 7. Statistics | 13 |
| 4. Engineering | | 8. Mathematics | 47 |
| a. Structures | 11 | 9. Economics Data Base | 1 |
| b. Cross-Sections | 7 | | |
| c. Frames | 6 | | |
| d. Linkages | 1 | | |
| e. Rotating Machinery | 4 | | |
| f. Piping | 2 | | |
| g. Stress and Strain | 390 | | |
| h. Civil | 17 | | |
| i. Electrical | 3 | | |
| j. Process Design | 1 | | |

## COMMENTS

The programs in this compendium are available only on Computer Sciences Corporation's INFONET time sharing computer service. Variations of some of these programs are commercially available elsewhere. The programs range from specific problems to systems for attacking a broad class of problems.

1666-78

## BIBLIOGRAPHIC INFORMATION

TITLE: ITS Library Manual

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: International Timesharing Corporation
Information Services Department
ITS Building, Jonathan Industrex
Chaska, Minnesota 55318

PUBLISHER: N/A

DATE: 1972

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Advertising brochure for a computer service.

SCOPE: Includes programs available on ITS timesharing service.

ARRANGEMENT: Program descriptions divided into five subject categories: business, mathematics and statistics, engineering and science, utility, and demonstration.

INDEXING DEVICES: Alphabetical index

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: Yes

UPDATE INTERVAL: Frequently

NUMBER OF PROGRAMS: 100

ENTRY FORMAT: Program Name, Subsystem, Brief Description.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECTS | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Business | | 3. Engineering Science | |
| a. Finance | 11 | a. Structural Engineering | 20 |
| b. Accounting | 4 | b. Electrical Engineering | 2 |
| c. Management | 5 | c. Water Piping System | 1 |
| 2. Mathematics and Statistics | | 4. Utility | |
| a. Statistics | 11 | a. Computer System Aids | 13 |
| b. Curve Fitting | 7 | 5. Demonstration | |
| c. Simulation | 1 | a. Computer Games | 16 |
| d. Roots & Eigenvalues | 6 | | |
| e. Optimization | 1 | | |
| f. Plotting | 3 | | |

## COMMENTS

This compendium describes the programs available to the users of the International Timesharing Corporation's Computer Services. It is a collection of specialized routines designed to solve many common types of calculation problems in the fields of business, mathematics, and engineering.

Twenty-one of the engineering programs are available from Environmental Services, Inc. through ITS.

NOTE: Included in 3-ring binder for protection.

1660-76

## BIBLIOGRAPHIC INFORMATION

TITLE: KRONOS Library Programs, Cybernet

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: Control Data Corporation
Special Services and Publications
HQMASF, P.O. Box O
Minneapolis, Minnesota 55440

PUBLISHER: N/A

DATE: 1974

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: User's manual of programs from a computer service.

SCOPE: Compact programs suitable for interactive operation by inexperienced users.

ARRANGEMENT: The programs are arranged in the following categories: Statistical, General Mathematical, Financial, Computer Games, Miscellaneous, and Procedure Files.

INDEXING DEVICES: Table of Contents

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: Yes

UPDATE INTERVAL: Change pages published periodically.

NUMBER OF PROGRAMS: 130

ENTRY FORMAT: Program Title, Category, Group Number, Language, Purpose, Scope, Method, Sample Run.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Statistics | 37 |
| 2. General Mathematics | 32 |
| 3. Finance | 32 |
| 4. Games | 13 |
| 5. Miscellaneous * | 9 |
| 6. KRONOS Procedures | 7 |

* Includes the following four engineering programs:

a. BEMDES - Steel beam design
b. GASVAL - Gas valve coefficients
c. LIQVAL - Liquid valve coefficients
d. STMVAL - Steam valve coefficients

## COMMENTS

This compendium provides two-page descriptions of programs and subroutines available on the KRONOS computer service of Control Data Corporation. These are special-purpose programs suitable for the interactive solution of common problems. A few of the miscellaneous programs address engineering topics.

Two other compendiums describing engineering programs available from the CDC computer services are:

CYBERNET Program Library Catalog, and
Systems Professional Master User Information and Operational Instructions

1565-76

## BIBLIOGRAPHIC INFORMATION

TITLE: Library Catalog

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: Interactive Sciences Corporation
60 Brooks Drive
Braintree, Massachusetts 02184

PUBLISHER: N/A

DATE: 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Program library catalog for a computer service

SCOPE: Programs suitable for interactive operation, many of which require a minimum of user computer experience.

ARRANGEMENT: Arranged by subject area.

INDEXING DEVICES: None

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 414

ENTRY FORMAT: Program Name, Code Designating Method of Access, and Program Description.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Mathematics | |
| a. Curve Fitting | 17 |
| b. Linear Equations, Linear Programming | 18 |
| c. Matrices - Eigenanalysis | 4 |
| d. Matrices - Operations | 34 |
| e. Matrices - Storage | 12 |
| f. Differentiation, Ordinary Differential Equations | 8 |
| g. Numerical Quadrature | 10 |
| h. Polynomials - Operations | 17 |
| i. Polynomials - Roots | 4 |
| j. Polynomials - Special Types | 6 |
| k. Special Functions | 9 |
| l. Miscellaneous | 7 |
| 2. Statistics | |
| a. General Systems | 1 |
| b. Correlation & Regression | 15 |
| c. Data Description & Manipulation | 25 |
| d. Design Analysis | 3 |
| e. Discriminant Analysis | 2 |
| f. Distribution Function | 5 |
| g. Factor Analysis | 10 |
| h. Nonparametric Statistics | 15 |
| i. Time Series | 7 |
| 3. Business and Financial | 18 |
| 4. Information Storage and Retrieval | 1 |
| 5. Engineering (Civil) | 12 |
| 6. Assimulators and Simulators for Mini-Computers | 8 |
| 7. Operations Research, Scheduling and Simulation | 10 |
| 8. Utility Programs and Routines | 58 |

## COMMENTS

This compendium is designed to provide a quick reference to programs available from Interactive Sciences Corporation. The programs were developed to solve problems in a variety of areas for a diverse group of users.

Engineering topics include analyses of concrete and steel structures as well as PERT and CPM construction project management aids.

1060-90

## BIBLIOGRAPHIC INFORMATION

TITLE: RL Program Abstract Library Users' Guide

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: BCS Richland, Inc.
Boeing Computer Services
P.O. Box 300
Richland, Washington 99352

PUBLISHER: N/A

DATE: December 31, 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of programs available on the BCS Richland computer.

SCOPE: Programs done by various contractors under ERDA sponsorship, in conjunction with nuclear power projects.

ARRANGEMENT: Abstract information is arranged according to the ERDA contractor.

INDEXING DEVICES: Program-name Cross-reference list; Keywords in Use; Keyword Cross-reference List.

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Irregular

NUMBER OF PROGRAMS: 476

ENTRY FORMAT: Abstract Number, Date Written, Descriptive Title, Author, Hardware, Keywords and Program Description.

PRICE: No charge

AD-A036 193 EG AND G WASHINGTON ANALYTICAL SERVICES CENTER INC R--ETC F/6 9/2
A DIRECTORY TO COLLECTIONS OF ENGINEERING COMPUTER PROGRAMS.(U)
JAN 77 N00014-76-C-0534

UNCLASSIFIED CHES/NAVFAC-FPO-1-77(5) NL

2 OF 3
AD
A036193

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS | MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|---|---|
| 1. Accounting | 24 | 17. Measurement | 14 |
| 2. Atmosphere | 3 | 18. Personnel | 10 |
| 3. Buoyancy | 1 | 19. PERT | 18 |
| 4. Control | 22 | 20. Plant Equipment | 12 |
| 5. Data Processing | 50 | 21. Plotter | 15 |
| 6. Data Reduction | 12 | 22. Power | 13 |
| 7. Design | 6 | 23. Radioactive | 16 |
| 8. Diffusion | 11 | 24. Scheduling | 16 |
| 9. Electrical | 2 | 25. Simulation | 11 |
| 10. Enthalpy | 5 | 26. Statistics | 31 |
| 11. Heat Transfer | 28 | 27. Stress | 22 |
| 12. Interactive | 27 | 28. Structural | 13 |
| 13. Inventory | 25 | 29. Thermal | 15 |
| 14. Least Squares | 12 | 30. Water | 6 |
| 15. Management | 15 | 31. Weather | 4 |
| 16. Manpower | 10 | 32. Wind | 7 |

## COMMENTS

This compendium is a computer listing of the programs, abstracts, and keywords of the Boeing Computer Users Richland Library. It is a diverse assortment of programs directed toward the planning, management, design, construction and operation of nuclear power projects. From the cross-referenced keywords, a user can isolate potentially useful programs. The abstracts identify whether a particular program will meet his needs.

See also the BCS compendium given coverage earlier in section.

## BIBLIOGRAPHIC INFORMATION

TITLE: Service and Program Listing

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: McDonnell Douglas Automation Company
Box 516
Saint Louis, Missouri 63166

PUBLISHER: N/A

DATE: N/A

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Advertising brochures of a computer service.

SCOPE: Includes programs proprietary to McDonnell Douglas, and others that have been obtained by them for users of the MCAUTO Computer Service.

ARRANGEMENT: Subject Categories; Also classified into IBM Systems, Direct Access Computing, and CDC CYBER 74 Programs.

INDEXING DEVICES: Subject Index

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: N/A

NUMBER OF PROGRAMS: 287

ENTRY FORMAT: Program Title and Purpose.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Business | |
| a. Business & Finance | 17 |
| b. Education | 7 |
| c. Insurance & Health Care | 4 |
| d. Manufacturing | 3 |
| e. Operations Research | 20 |
| f. Project Management | 10 |
| 2. Science & Engineering | |
| a. Applied Mathematics | 74 |
| b. Chemical Process Engineering | 9 |
| c. Civil Engineering | 26 |
| d. Electrical Power Engineering | 7 |
| e. Electronics Engineering | 15 |
| f. Mechanical Engineering | 14 |
| g. Structural Engineering | 25 |
| h. Numerical Control | 4 |
| i. Special Purpose | 9 |
| 3. System Program Aids | 43 |

## COMMENTS

This compendium is made up of a set of technical advertising brochures of the McDonnell Douglas Automation Company, which provides computing services in many metropolitan areas. Many of the programs represent large, general purpose applications. Experience or training is required to use these programs effectively.

1666-78

## BIBLIOGRAPHIC INFORMATION

TITLE: Systems Professional Master User Information and Operational Instructions (84006900)

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: Control Data Corporation
Special Services and Publications
HQN05F, P.O. Box O
Minneapolis, Minnesota 55440

PUBLISHER: N/A

DATE: June 15, 1974

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Structural program users' manuals from a Computer Service.

SCOPE: These proprietary programs are available through CDC CYBERNET Computer Service.

ARRANGEMENT: Grouped for design in concrete, steel, masonry and wood; plus programs for general structural analysis.

INDEXING DEVICES: Numerical Index, Subject Index, Material Index

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Periodic revisions and additions are made.

NUMBER OF PROGRAMS: 32

ENTRY FORMAT: Abstract, Capabilities, Input/Output, Method, Users' Guide, Examples.

PRICE: $44.00 to non-users.

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Beams | |
| a. Analysis | 5 |
| b. Analysis and Design | 14 |
| 2. Columns | |
| a. Analysis and Design | 2 |
| 3. Column Base Plates | |
| a. Analysis and Design | 1 |
| 4. Earthquake | |
| a. Analysis | 5 |
| b. Analysis and Design | 8 |
| 5. Frames | |
| a. Analysis | 4 |
| 6. Footings/Foundations | |
| a. Analysis | 1 |
| b. Analysis and Design | 2 |
| 7. Girders | |
| a. Analysis | 4 |
| b. Analysis and Design | 10 |
| 8. Slabs | |
| a. Analysis | 3 |
| b. Analysis and Design | 7 |
| 9. Trusses | |
| a. Analysis | 2 |
| 10. Walls | |
| a. Analysis | 4 |
| b. Analysis and Design | 3 |

## COMMENTS

The Systems Professional programs are made available exclusively from Control Data Corporation's time sharing service.

Although there are only 32 programs, they are sufficiently well-developed to make them useful for a number of related applications. The user's guides are very thorough and include examples. A number of the programs go beyond the standard analysis phases and into the realm of design and selection of materials in accordance with current specifications.

Two other compendiums describing engineering programs available from the CDC Computer Service are:

KRONUS Library Programs, and

CYBERNET Program Library Catalog

1606-70

## BIBLIOGRAPHIC INFORMATION

TITLE: TYMCOM-370 User Program Index: A Synopsis of Programs and Facilities

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: TYMSHARE
Cupertino, California 95014

PUBLISHER: N/A

DATE: Rev. 7, 1974
Rev. 9, May 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Program library catalog for a computer service.

SCOPE: Compact programs suitable for interactive operation by inexperienced users.

ARRANGEMENT: Programs are arranged alphabetically by title, within three volumes.

INDEXING DEVICES: Table of Contents

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: Irregular Revisions

NUMBER OF PROGRAMS: 739

ENTRY FORMAT: Program Name, Program Description and Program Location.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Tymcom 370 | |
| a. Biomedical Statistical and Mathematical Procedures | 1* |
| b. Simulation and Modeling | 4* |
| c. Information Analysis and Data Management | 4* |
| d. Utilities | 12 |
| e. Sorters | 8 |
| 2. Tymcom IX | |
| a. Business | 39 |
| b. Statistics | 18 |
| c. Engineering | 26 |
| d. Simulation | 2 |
| e. Utilities and Graphics | 23 |
| f. Subroutines | 341 |
| 3. Tymcom X | |
| a. Languages and Editors | 19 |
| b. Linear Programming | 4 |
| c. Statistics Package | 1 |
| d. Structural Engineering | 4 |
| e. Continuous System Simulation (CSMP) | 1 |
| f. Electrical and Electronic Engineering | 2 |
| g. Computer Simulation | 37 |
| h. Plotting, Input/Output and Utilities | 29 |
| i. Demonstrations | 7 |
| j. Business | 49 |
| k. Subroutines | 108 |

* Packages of multiple, related programs

## COMMENTS

This compendium is printed in three volumes for the Tymshare Computer service. Programs are described by a single phrase. Usually a reference is provided for obtaining further details. It is not apparent whether the volumes supersede each other in some order or are complementary. The engineering computer programs are dominated by electrical applications. Many of the programs are packages obtained by Tymshare from other sources.

1886-78

# SECTION 5
# SOFTWARE SOURCES AND SERVICES

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Auerbach Computer Technology Reports/Software

**PERSONAL AUTHOR:** N/A

**CORPORATE AUTHOR:** N/A

* **PUBLISHER:** Auerbach Publishers, Inc.
6560 North Park Drive
Pennsauken, New Jersey 08109

**DATE:** Subscription basis

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts of proprietary software packages.

**SCOPE:** Includes programs being marketed by their originators.

**ARRANGEMENT:** The section on software applications is a general subject grouping of program packages. Each grouping has an individual directory.

**INDEXING DEVICES:** Table of Contents
Vendor Index
Software Package Name Index
Subject Index

**ABSTRACTS:** Yes

**THEORY:** Yes

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** 6 issues per year

**NUMBER OF PROGRAMS:** Varies

**ENTRY FORMAT:** Title, General Information, Description, Input, Process, Output, Support, and Company Headquarters.

**PRICE:** $450.00

## SUBJECT INDEX

| MAJOR SUBJECT | MAJOR SUBJECT |
|---|---|
| 1. Payroll | 5. General Accounting |
| 2. Accounts Receivable | 6. General Manufacturing |
| 3. Accounts Payable | 7. Inventory Control |
| 4. General Ledger | 8. Miscellaneous Applications |

## COMMENTS

This publication is a complete service on proprietary software packages, presenting detailed information on the operation and implementation of specific software packages. Also provided are in-depth definitional reports on computer applications. Extensive use is made of comparison charts to assist the user in the selection of a package.

## BIBLIOGRAPHIC INFORMATION

TITLE: CAD Centre Software List, Issue No. 3

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: Computer Aided Design Centre
25 Kensington Gore
London, SW7 2 ET
England

PUBLISHER: N/A

DATE: December 22, 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Tabular summaries of programs available from a software firm.

SCOPE: British graphics and engineering packages marketed internationally.

ARRANGEMENT: Grouped according to major subject area.

INDEXING DEVICES: None

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 41

ENTRY FORMAT: Name, Size, Documentation, Implementations, Purpose, Type of Customer and Contact.

PRICE: N/A

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. General Purpose Graphics | 12 |
| 2. Mechanical Engineering | |
| Oil Film Bearings | 1 |
| Gear Design | 2 |
| Machining | 2 |
| Component Design | 3 |
| Torsional Vibration | 1 |
| 3. Chemical Engineering | |
| Hardware Design | 5 |
| Plant/Process Design | 3 |
| Mass Balance | 1 |
| Control Systems | 1 |
| 4. Electrical Engineering | |
| Classical Control Theory | 1 |
| Power Systems | 1 |
| Electromagnetic/ Electrostatic Lenses | 1 |
| Printed Circuit Boards | 1 |
| Radio Wave Propagation | |
| 5. Construction Industry | |
| Highway Design | 2 |
| Geographical Aids | 2 |
| Circular Tank Design | 1 |
| Prestressed Continuous Beam | 1 |
| Welded Tubular Node | 1 |

## COMMENTS

The capability of some programs in this compendium is obscured by descriptions which lack technical precision. The compendium lists names of people who will assist users. In addition, compendium indicates that documentation is available for many of the programs.

NOTE: Included in a 3-ring binder for protection.

## BIBLIOGRAPHIC INFORMATION

**TITLE:** Datapro Software Directory.

**PERSONAL AUTHOR:** N/A

**CORPORATE AUTHOR:** N/A

* **PUBLISHER:** Datapro Research Corporation
Delran, New Jersey 08075

**DATE:** Subscription basis

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Abstracts of all varieties of proprietary software offered for sale to the computer user community.

**SCOPE:** Designed as a tool for management and technical staffs at all levels.

**ARRANGEMENT:** The applications reports are categorized into 19 sections, each separated with a category tab. A Table of Contents is provided for each section.

**INDEXING DEVICES:** Vendor Index, Application Index, Product Index, Hardware Index

**ABSTRACTS:** Yes **THEORY:** Yes

**ASSOCIATED SEARCH ASSISTANCE:** Yes

**UPDATE INTERVAL:** 12 issues per year

**NUMBER OF PROGRAMS:** Varies

**ENTRY FORMAT:** Product Name, Vendor Name, Address, Purpose, Hardware, Memory Required, Peripherals, Operating System, Number of Programs in Package, Language, Price, Documentation Availability, Number of Current Users, etc.

**PRICE:** $270.00

## SUBJECT INDEX

| MAJOR SUBJECT | MAJOR SUBJECT |
|---|---|
| 1. Accounting | 9. Language Processors |
| 2. Banking & Finance | 10. Management Sciences |
| 3. Computer Management Aids | 11. Manufacturing |
| 4. Data Communications | 12. Mathematics & Statistical |
| 5. Data Management | 13. Medical & Health Care |
| 6. Education | 14. Payroll & Personnel |
| 7. Engineering & Scientific<br>a. Construction/Architecture<br>b. Electrical Engineering<br>c. Graphic Arts<br>d. Petroleum Industry<br>e. Plastics<br>f. Miscellaneous | 15. Programming Aids<br>16. Sales & Distribution<br>17. Systems Programs<br>18. Utilities |
| 8. Insurance | 19. Miscellaneous |

## COMMENTS

This directory is compiled and edited to present facts for evaluating the software market.

1969-70

## BIBLIOGRAPHIC INFORMATION

**TITLE:** ENPAL, Engineering Numerics Petroleum Applications Library

**PERSONAL AUTHOR:** N/A

***CORPORATE AUTHOR:** Engineering Numerics Corporation
7600 Carpenter Freeway
Dallas, Texas 75247

**PUBLISHER:** N/A

**DATE:** December 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

**TYPE OF COMPENDIUM:** Brief descriptions of petroleum applications programs being marketed.

**SCOPE:** Programs are proprietary to the corporate author.

**ARRANGEMENT:** Broad subject categories under which program titles are listed, followed by brief descriptions, also arranged by subject.

**INDEXING DEVICES:** None

**ABSTRACTS:** No **THEORY:** No

**ASSOCIATED SEARCH ASSISTANCE:** No

**UPDATE INTERVAL:** N/A

**NUMBER OF PROGRAMS:** 48

**ENTRY FORMAT:** The first section provides only Program Title and the second section gives a short description of the program and intended usage.

**PRICE:** No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Geological | 10 |
| 2. Production Engineering | 11 |
| 3. Reservoir Engineering | 16 |
| 4. Reserves & Economics | 7 |
| 5. Mathematical & Statistical | 4 |

## COMMENTS

These programs are available individually or collectively for lease or purchase. The library is under active development, with new programs being added periodically.

NOTE: Included in 3-ring binder for protection.

## BIBLIOGRAPHIC INFORMATION

TITLE: ICP Reference Series Software Directory, Vol. I and Vol. II.

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: International Computer Programs, Inc.
1119 Keystone Way
Carmel, Indiana 46032

PUBLISHER: N/A

DATE: July 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of commercially available programs.

SCOPE: A directory of computer programs and services that are currently being marketed.

ARRANGEMENT: Broad subject categories; Volume I - Data Processing Management; Volume II - Business Management

INDEXING DEVICES: Alphabetical, Hardware and Language Index

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: Yes

UPDATE INTERVAL: Every 6 months.

NUMBER OF PROGRAMS: 3600 products and services are included.

ENTRY FORMAT: Title, Program Description, Source, and Price.

PRICE: $100 for yearly subscription; $60 for one issue.

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| 1. Chemical & Petroleum | 49 |
| 2. Construction | 48 |
| 3. Engineering Application | |
| a. Aeronautical | 2 |
| b. Chemical | 9 |
| c. Civil | 68 |
| d. Electrical & Electronic | 60 |
| e. Environmental Protection | 2 |
| f. General | 28 |
| g. Industrial | 3 |
| h. Marine | 1 |
| i. Mechanical | 94 |
| j. Other | 35 |
| 4. Mining | 1 |
| 5. Steel Fabrication | 1 |

## COMMENTS

This compendium provides a communication medium between buyers and sellers of computer program or data services. It contains listings of program products and data services that have been submitted for marketing.

Volume I lists systems software and services for data processing professionals; these are not applicable to the solution of ocean engineering problems.

Volume II describes application software and services for business applications. From this broad scope, only those topics relating to ocean science and engineering have been listed in the Subject Index.

The ICP directory is a major sourcebook for programs being marketed. An index to all programs being marketed by a given organization would be more useful than the simple list of contributors. Specifying the pages where subtopics of engineering programs begin would make the Table of Contents more useful.

1666-78

## BIBLIOGRAPHIC INFORMATION

TITLE: MARCS Marine Structures Computer System, Information Manual, 3rd Edition

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: Synercom Technology, Inc.
6300 Hillcraft
Houston, Texas 77036

PUBLISHER: N/A

DATE: 1975

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Advertising brochure for marine structures programs.

SCOPE: Proprietary programs developed and marketed by Synercom.

ARRANGEMENT: None

INDEXING DEVICES: Table of Contents

ABSTRACTS: Yes THEORY: Yes
ASSOCIATED SEARCH ASSISTANCE: No
UPDATE INTERVAL: None planned
NUMBER OF PROGRAMS: 3

ENTRY FORMAT: Descriptive Paragraph, Features, Input and Output, and Illustrations.

PRICE: No charge

## SUBJECT INDEX

PROGRAM TOPIC

1. AUTOPLAT - preprocessor system for marine structures
2. SEALOAD - environmental model for marine structures
3. STRAN - structural analysis of marine structures

## COMMENTS

MARCS marine structures model is a proprietary product of Synercom Technology, Inc. It is a compendium only in the loose sense that the overall model is divided into three subsystems which may be used as independent programs. It is included as a part of this index primarily because the MARCS programs have direct application to the design of fixed ocean facilities.

The AUTOPLAT subsystem is a preprocessor for describing a marine structure and related tasks. SEALOAD is used to describe and calculate environmental forces on the structure. STRAN calculates the stresses and deflections of the marine structure.

## BIBLIOGRAPHIC INFORMATION

TITLE: MDX - Computer Program Descriptions

PERSONAL AUTHOR: N/A

* CORPORATE AUTHOR: MDX
1412 Ridgemont Court
Columbia, Missouri 65201

PUBLISHER: N/A

DATE: 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Abstracts of programs for steel column and beam design.

SCOPE: Three programs available for leasing from MDX.

ARRANGEMENT: Alphabetical by program title.

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No
ASSOCIATED SEARCH ASSISTANCE: No
UPDATE INTERVAL: None planned
NUMBER OF PROGRAMS: 3

ENTRY FORMAT: Introduction, Commands, and Examples.

PRICE: No charge

## SUBJECT INDEX

PROGRAM TOPIC

1. AISCOL - designs steel columns for a variety of loading and end support conditions.
2. BASEPL - designs steel column base plates for axial load as well as the anchor bolts if movement exists at the bottom of the column.
3. AISCON - designs welded and/or bolted beam-to-column or beam-to-beam connections.

## COMMENTS

This compendium is a thorough description of three highly specialized programs in the field of steel construction. These programs are available on a number of time sharing services or can be leased directly from MDX.

## BIBLIOGRAPHIC INFORMATION

TITLE: Ocean Engineering Computer Programs

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: Mechanics Research Inc.
9841 Airport Boulevard
Los Angeles, California 90045

PUBLISHER: N/A

DATE: N/A

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Advertising brochure of ocean engineering programs.

SCOPE: Proprietary programs, developed by Mechanics Research for sale.

ARRANGEMENT: Separate narratives for each program.

INDEXING DEVICES: None

ABSTRACTS: Yes THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 7

ENTRY FORMAT: Program Title, Solution For, Analytical Technique, Inputs, Outputs, and Sample Case.

PRICE: No charge

## SUBJECT INDEX

STARDYNE Static Analysis

Structures to be analyzed are modeled as systems of nodes interconnected by beams and plates. Weight and inertia are distributed among the nodes; elasticity is modeled in the connecting elements. The deflections, loads, stresses, natural frequencies, and node shapes are computed for the structure.

DYNRE Dynamic Response

Solutions for the response of a system to transient shock or sinusoidal disturbance are calculated, including the effects of mass, damping, and stiffness, using STARDYNE.

SEADYNE

This program solves the 12-degree of freedom problem of two floating bodies elastically coupled in a seaway. Using hydrostatic, hydrodynamic, geometric, elastic, and wave characteristics, the motions and loads of the system are found.

HAVER

The response of a floating body to Neumann, Pierson-Moskowitz, or Bretscheider wave spectra plus swell is calculated.

SEASTAR

Heave motions of floating structures are calculated in the time domain using a nonlinear, lumped parameter analysis.

SEASTRESS

A lumped-mass model of a floating drilling rig.

SEADAM

The statistical properties of ocean waves are extracted from data.

## COMMENTS

This is a technically oriented sales brochure for a set of commercially available ocean engineering computer programs. The capabilities of each program are described, along with a summary of the analytical technique and a sample problem. The programs are strongly oriented toward the design of offshore facilities.

## BIBLIOGRAPHIC INFORMATION

TITLE: Presentation to Naval Facilities Engineering Command

PERSONAL AUTHOR: Lowery, Edwin L., Speaker

* CORPORATE AUTHOR: ETA Engineers, Inc.
6101 Southwest Freeway
Houston, Texas 77057

PUBLISHER: N/A

DATE: September 14, 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Advertising brochure for a consulting engineering service.

SCOPE: Proprietary programs developed by ETA Engineers, Inc. are mentioned.

ARRANGEMENT: A narrative of computer applications in offshore engineering, with programs cited throughout the text.

INDEXING DEVICES: None

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: None planned

NUMBER OF PROGRAMS: 8

ENTRY FORMAT: Program title and descriptive phrases in narrative text.

PRICE: No charge

## SUBJECT INDEX

PROGRAM TOPIC

1. PIPER; CODER - piping flexibility
2. PIPLAY - marine pipelaying
3. MDUSAS - mobile drilling unit structural analysis
4. WIND; WAVE - forces on offshore structures
5. DYNAML - dynamic structural analysis
6. NAME - naval architecture and marine engineering

## COMMENTS

This compendium was prepared to present the capabilities of ETA Engineers, Inc. to the Naval Facilities Engineering Command. As such, eight proprietary computer programs developed by that company are mentioned and described by a phrase, but not cataloged or abstracted.

## BIBLIOGRAPHIC INFORMATION

TITLE: Sun Computer Services Computer Program Index

PERSONAL AUTHOR: N/A

*CORPORATE AUTHOR: Sun Computer Services
Suite 350 - #7 Executive Mall
680 E. Swedesford Rd.
Wayne, Pennsylvania 19087

PUBLISHER: N/A

DATE: 1976

* OBTAIN FROM THIS SOURCE.

## DESCRIPTIVE INFORMATION

TYPE OF COMPENDIUM: Program titles from a computer service library.

SCOPE: Programs primarily related to the engineering of oil refineries.

ARRANGEMENT: Program information is arranged according to subject categories.

INDEXING DEVICES: None

ABSTRACTS: No THEORY: No

ASSOCIATED SEARCH ASSISTANCE: No

UPDATE INTERVAL: N/A

NUMBER OF PROGRAMS: 76

ENTRY FORMAT: Title and Program Number.

PRICE: No charge

## SUBJECT INDEX

| MAJOR SUBJECT | NO. OF PROGRAMS |
|---|---|
| Engineering | |
| 1. Civil/Structural | 3 |
| 2. Drafting | 2 |
| 3. Electrical | 1 |
| 4. Mechanical | |
| a. Equipment | 7 |
| b. Piping | 7 |
| c. Vessels | 4 |
| 5. Process | |
| a. Distillation | 6 |
| b. Absorber/Stripper | 1 |
| c. Equilibria | 3 |
| d. Fluid Flow | 4 |
| e. Heat & Mass Balance | 8 |
| f. Heat Transfer | 14 |
| g. Properties | 4 |
| 6. Properties | 2 |
| 7. Miscellaneous | 10 |

## COMMENTS

Abstracts of the individual programs may be requested, and programs are available for leasing.

NOTE: Included in 3-ring binder for protection.

# APPENDIX A
# SUMMARY OF COMPENDIUMS

**APPENDIX A**

**SUMMARY OF COMPENDIUMS**

| COMPENDIUM DESIGNATION | NUMBER OF PROGRAMS | MAJOR SUBJECT CATEGORIES | | | | | | | | | | | | | | | | | | | | | | | | | | PAGE NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Marine Structures | Buoys & Moorings | Hulls | Marine Propulsion | Navigation Systems | Waves & Tides | Oceanography | Structures | Architecture | Civil Hydraulics | Highways | Electronics | Electrical Power | Control Systems | Thermodynamics | Nuclear | Chemical | Petroleum & Refining | Simulation | Mathematics | Statistics | Management | Financial | Computer Utility | |
| APEC | 6 | | | | | | | | | X | | | | X | | | | | | | | | X | | | 3-2 |
| Argonne National Lab | 555 | | | | | | | | X | | | | | | X | X | X | X | | | X | | X | | X | 1-2 |
| ASIAC | 41 | | | | | | | | | | | | | | | X | | | | | | | | | | 1-4 |
| Auerbach | - | | | | | | | | | | | | | | | | | | | | | | X | X | | 5-2 |
| Battelle, PNL | 68 | | | | | | | | | | | | | | | | X | | | X | | | | | | 2-14 |
| Boeing (McLean, Va.) | 58 | | | | | | | | | | | | X | X | X | | | | | | X | | | | X | 4-2 |
| Boeing (Richland, Wa.) | 476 | | | | | | | | | | X | | X | X | X | X | X | | | X | X | X | X | X | | 4-16 |
| Bureau of Mines | 221 | | | | | | | | | | | | | | | | | | | X | X | X | | | X | 1-28 |
| Bureau of Reclamation | 1043 | | | | | | | | | | X | | X | X | | | | X | | | X | X | X | X | X | 1-6 |
| CAD Centre | 41 | | | | | | | | | X | | X | X | X | X | | | X | | | | | | | X | 5-4 |
| CDC Cybernet | 37 | | | | | | | | | | | | | | | X | | | | | X | | | | X | 4-4 |
| CDC Kronos | 130 | | | | | | | | | | | | | | | | | | | | X | X | | X | X | 4-12 |
| CDC System Professional | 32 | | | | | | | | | X | | | | | | | | | | | | | | | | 4-20 |
| CEL Survey | 100 | | X | | | | | | | | | | | | | X | | | | | X | X | | | X | 1-14 |
| CEPA | 477 | | | | | | | | | X | X | X | | | | | | | | | | | X | | X | 3-4 |
| CERC | 27 | | | | | | X | X | | | | | | | | | | | | | | | | | | 1-12 |
| Collection of Literature | 46 | X | X | | | | X | X | | | | | | | | | | | | X | X | | | | | 3-6 |
| COSMIC | - | | | | | X | | | | | X | | X | X | X | X | X | X | | | X | X | | | | 1-16 |
| Datapro | - | | | | | | | | | X | | | X | X | | | | X | X | | X | X | X | X | X | 5-6 |
| Dow Engineering | 146 | | | | | | | | | X | X | | | X | | X | | X | | | X | | X | X | X | 3-12 |
| ENPAL | 48 | | | | | | | | | | X | | | | | | | X | X | | X | X | X | X | | 5-8 |
| ETA Engineers | 8 | X | | | | | | | | | | | | | | | | | | | | | | | | 5-18 |
| Federal Construction Council | 704 | | | | | | | | | X | X | | | X | | | | X | | | X | | X | | X | 1-22 |
| General Electric | 184 | | | | | | | | | | | | | | | | | | X | X | | X | X | X | | 4-6 |
| Hydrologic Engineering Center | 29 | | | | | | | | | | X | | | | | X | | | | X | | | | | | 1-18 |
| ICP | - | X | | | | | | | | X | X | | X | X | X | X | | X | X | X | X | X | X | X | X | 5-10 |
| Infonet | 554 | | | | | | | | | X | | | | X | | | | | | X | X | X | X | X | X | 4-8 |

| COMPENDIUM DESIGNATION | NUMBER OF PROGRAMS | MAJOR SUBJECT CATEGORIES | | | | | | | | | | | | | | | | | | | | | | | | | PAGE NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Marine Structures | Buoys & Moorings | Hulls | Marine Propulsion | Navigation Systems | Waves & Tides | Oceanography | Structures | Architecture | Civil Hydraulics | Highways | Electronics | Electrical Power | Control Systems | Thermodynamics | Nuclear | Chemical | Petroleum & Refining | Simulation | Mathematics | Statistics | Management | Financial | Computer Utility | |
| Interactive Science | 414 | | | | | | | | X | | X | | | | | | | | | X | X | X | X | X | X | 4-14 |
| ITS | 100 | | | | | | | | X | | X | | X | X | | | | | | X | X | X | X | X | X | 4-10 |
| Maritime Administration | 1013 | X | | X | X | X | | | | | | | | X | | | | | | | | | | | | 1-26 |
| MARCS | 3 | X | | | | | | | | | | | | | | | | | | | | | | | | 5-12 |
| Marine Science | 483 | X | X | | | | X | X | | | | | | | | X | | X | | . | X | | | | X | 1-20 |
| McDonnell Douglas | 287 | | | | | | | | X | | X | | | | X | X | | X | | | X | | X | X | X | 4-18 |
| MDX | 3 | | | | | | | | X | | | | | | | | | | | | | | | | | 5-14 |
| Mechanics Research | 7 | X | | | | X | X | | | | | | | | | | | | | | | | | | | 5-16 |
| NASA/Goddard | 1526 | | | | | | | | X | | X | | X | X | X | X | | X | | X | X | X | X | X | X | 1-8 |
| Naval Underwater System Center | 53 | | X | | | X | X | X | | | | | | | | | | | | X | | | | | | 1-10 |
| Oceanographic Moorings | 24 | | X | | | | | | | | | | | | | | | | | | | | | | | 3-10 |
| Shipping and Shipbuilding | 55 | | | X | X | | | | X | | | | | | X | | | | | | | | X | | | 3-8 |
| Shock and Vibration | 505 | | | | | | | | X | | | | | | | | | | | | | | | | | 1-30 |
| Stanford University | 206 | | | | | | | | | | | | | | | | | | | | X | X | | | X | 2-8 |
| Structural Mechanics (Fenves, et.al) | 6 | | | | | | | | X | | | | | | | | | | | | | | | | | 1-24 |
| Structural Mechanics (Grooms) | 185 | | | | | | | | X | | | | | | | | | | | | | | | | | 1-32 |
| Structural Mechanics (Perrone) | 563 | | | | | | | | X | | | | | | | | | | | | | | | | | 2-2 |
| Structural Mechanics (Pilkey, et.al.) | 625 | | | | | | | | X | | | | | | | | | | | | | | | | | 2-12 |
| Submerged Mooring Systems | 48 | | X | | | | X | | | | | | | | | | | | | | | | | | | 1-34 |
| Sun Computer Services | 76 | | | | | | | | X | | X | | X | X | | X | | X | X | | | | | | | 5-20 |
| TYMSHARE | 739 | | | | | | | | X | | | | X | X | | | | | | X | X | X | X | X | X | 4-22 |
| University of Colorado | 671 | | | | | | | | | | | | | | | | | | | | X | X | | | X | 2-16 |
| University of Rhode Island | 7 | | | | | | | | | | | | | | | | | | | | | | | | X | 2-6 |
| University of Washington | 530 | | | | | | | | | | | | | | | | | | | X | X | X | X | X | X | 2-10 |
| Waterways Experiment Station | 163 | X | | | | | X | | X | | X | | | | | X | | | | | X | | X | | X | 1-36 |
| Whimper | 29 | | | | | | X | | | | | | | | | | | | | | | | | | X | 2-18 |
| Woods Hole | 15 | | X | | | X | X | X | | | | | | | | | | | | | | | | | X | 2-4 |

# APPENDIX B
# MAILING LIST

## APPENDIX B

## MAILING LIST

AAL Corporation Technical Library
Cockeysville, Maryland 21030

ACCO Cable Controls Division
1022 East Michigan Street
Adrian, Michigan 49221

ACCO Equipment Division
1110 East Princess Street
York, Pennsylvania 17403

ACCO Wire Rope Division
271 South Penn Avenue
Wilkes Barre, Pennsylvania 18703

ACF Industries, Inc.
W-K-M Valve Division
P. O. Box 2117
Houston, Texas 77001

Aerojet-General Corporation
Advanced Products Group
9200 East Flair Drive
El Monte, California 91734

Aerojet-General Corporation
Ordnance Development Technical Library
9236 East Hall Road
Downey, California 90241

Aerojet-General Corporation
Technical Information Center
P. O. Box 15847
Sacramento, California 95813

Aerospace Structures Information and Analysis Center
AFFDL/FBR
Wright-Patterson Air Force Base, Ohio 45433

Air-Conditioning and Refrigeration Institute
1815 North Fort Myer Drive
Arlington, Virginia 22209

Air Force Institute of Technology Library
Building 640, Area "B"
Wright-Patterson Air Force Base, Ohio 45433

Air Force Systems Command
Aerospace Research Labs
Building 450
Wright-Patterson Air Force Base, Ohio 45433

Alabama Power Company
600 North 18th Street
Birmingham, Alabama 35203

Allegheny Ludlum Steel Corporation
Research Center Library
Alabama and Pacific Avenues
Brackenridge, Pennsylvania 15014

Allied Chemical Corporation
P. O. Box 1039R
Morristown, New Jersey 07960

American Association of Oil Well Drilling Contractors
211 North Ervay Street
Dallas, Texas 75201

American Association of Petroleum Geologists
P. O. Box 979
Tulsa, Oklahoma 74101

American Concrete Pipe Association
8320 Old Courthouse Road
Vienna, Virginia 22180

American Concrete Institute
P. O. Box 4754 Redford Station
22400 West Seven Mile Drive
Detroit, Michigan 48219

American Data Processing, Inc.
Book Bldg 4th Floor
Detroit, Michigan 48224

American Institute of Mining, Metallurgical
and Petroleum Engineers
345 East 47th Street
New York, New York 10017

American Institute of Steel Construction
101 Park Avenue
New York, New York 10017

American Petroleum Institute
300 Corrigan Tower
Dallas, Texas 75201

American Software and Computer Company
2045 Peachtree Street, Northeast - Suite 325
Atlanta, Georgia 30309

American Undersea
101 Townsend
San Francisco, California 94107

American Wire Rope Manufacturers Association
11051 Georgia Avenue
Silver Spring, Maryland 20902

Amphenol Cable Division
6235 South Harlem Avenue
Chicago, Illinois 60638

Anchor Speciality Manufacturing Company
300 Hollister Road
Teterboro, New Jersey 07608

A. O. Smith Corporation
P. O. Box 584
Milwaukee, Wisconsin 53201

Appalachian Power Company
40 Franklin Road, Southwest
Roanoke, Virginia 24011

Applications Programming Company
714 Ocean Road
Springlake, New Jersey 07762

Applications Software Inc.
21515 Hawthorne Boulevard
Torrance, California 90503

Argonne National Laboratory
Argonne Code Center
9700 South Cass Avenue
Argonne, Illinois 60439

Arizona State University
University Library
Tempe, Arizona 85281

Arkansas-Missouri Power Company
405 West Park Street
Blytheville, Arkansas 72203

Arkansas Power and Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Armco Steel Corporation
P. O. Box 1698
Baltimore, Maryland 21203

Asian Computer Services Pte. Ltd.
Box 222, General Post Office
Singapore 1
Republic of Singapore

Association for Computing Machinery
1133 Avenue of the Americas
New York, New York 10036

Association of Engineering Geologists
P. O. Box 21-4164
Sacramento, California 95821

Association of Iron and Steel Engineers
1010 Empire Bldg
Pittsburgh, Pennsylvania 15222

Atkins Research and Development
Woodcote Grove, Ashley Road,
Epsom, Surrey, England

Atlantic, Gulf and Pacific
250 Broadway
New York, New York 10007

Auerbach Publishers, Inc.
6560 North Park Drive
Pennsauken, New Jersey 08109

Automated Procedures for Engineering Consultants, Inc.
Grant-Deneau Tower
Suite M-15
Dayton, Ohio 45402

Baash-Ross Division
5306 Clinton Drive
Houston, Texas 77001

Baltimore Gas and Electric Company
Gas and Electric Bldg
Baltimore, Maryland 21203

Battelle Memorial Institute
Pacific Northwest Laboratory
P. O. Box 999
Richland, Washington 99352

BCO Nacional de Dados Oceanograficas
Primero Distrifo
Naval-Ihld Fiscal
Rio de Janeiro GB 20.000

Bedford Institute
Room 602
Dartmouth, Nova Scotia, Canada

Belfour Stulen, Inc.
Mechanical Properties Data Center
13919 West Bay Shore Drive
Traverse City, Michigan 49684

The Bendix Corporation
Bendix Center
Southfield, Michigan 48075

Benham-Blair and Affiliates
6323 North Grand Boulevard
Oklahoma City, Oklahoma 73118

Bethlehem Steel Corporation
Schwab Memorial Library
701 East 3rd Street
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2600 East Imperial Highway
Lynwood, California 90262

Western Gear Corporation
Heavy Machinery Division
No. 2 Greenway Plaza, Room 400
Houston, Texas 77046

Woods Hole Oceanographic Institute
Woods Hole, Massachusetts 02543

Zapata Off-Shore Company
1701 Houston Club Building
Houston, Texas 77002

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